SERVICE MANUAL

PK-102

Date	Revise Version	Description
2009.05.26	V1.0	Initial Issue
2009.08.05	V2.0	Update Engineering Spec. in Chapter 1; Modify GM7020 FW and SD Files Upgrade Procedure in Ch5-2;
2009.11.24	V3.0	Add tear off 3M Tape in Ch2-5; Add ACCO PK-102
2010.01.28	V4.0	Modify “Defect specification table” in Chapter 4; Add picture in Chapter 5;

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SI Alina TSE: Mina Check: Alick Approved: C.C.Chen

Preface

This manual is applied to PK-102 projection system. The manual gives you a brief description of basic technical information to help in service and maintain the product.

Your customers will appreciate the quick response time when you immediately identify problems that occur with our products. We expect your customers will appreciate the service that you offer them.

This manual is for technicians and people who have an electronic background. Please send the product back to the distributor for repairing and do not attempt to do anything that is complex or is not mentioned in the troubleshooting.

Notice: The information found in this manual is subject to change without prior notice. Any subsequent changes made to the data herein will be incorporated in future edition.

PK-102 Service Manual

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Manual Version 4.0

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Chapter 1

Introduction

1-1 Highlight

No	Item	Description
1	Dimension (WxDxH)	● 51.25*106.45*17.10mm(WxDxH)
2	Weight	● <130g with Battery
3	Resolution	● 480X320
4	Off-set	● 100 %±5%
5	Throw ratio	● 1.89 distance/width
6	Projection Image Size	● 5”~66”
7	Life Type	● LED (2 Watt RGB LED)
8	LED Life	● 20,000 Hours @ 50% brightness decay
9	Speaker	● Built in 0.5W, 4 ohm mono speaker Build-in Speaker
10	AC Adapter	● 100~240V, 50/60Hz, DC 5V/2A ● DC +4.75V~+5.25V ● DC ψ2.35mm plug
11	I/O Definition	● One 18-pin universal connector to VGA in and USB (Data Transfer) ● One 4 pin Audio/Video inψ2.5mm jack ● Oneψ2.35mm DC jack
12	Power Supply	● Auto-ranging: AC100V ~ 240V ± 10%, 50-60Hz DC 5V/2A
13	Power Consumption	● 5 W, VGA display mode (for AC adapter, but not include AC adaptor’s power consumption) ● 6 W, Playback mode (for AC adapter, but not include AC adaptor’s power consumption) ● Off mode current < 0.5mA ● USB host mode support 150mA 5V

No	Item	Description
14	Input signal specification	● Analog RGB signal (PC) Analog RGB 0.7 +/- 0.1 Vp-p, 75 ohm Separate TTL H,V Sync. ● Video signal NTSC/PAL Composite video 1.0 +/- 0.1 Vp-p, 75 ohm ● Audio signal (Share same A/V input jack)
15	Temperatures	● Operating: 5 ~ 35 °C ● Non-operation: -20°C ~ 60°C ● Battery charge : 5 ~ 30 °C
16	Altitude	● Operating: 0 ~ 2,500 ft, for 5°C~35°C 2,500 ft ~ 5,000 ft, for 5°C~30°C 5,000 ft ~ 10,000 ft, for 5°C~25°C
17	Flash Memory	● MicroSD4GB flash memory
18	Keypads	● Key1 : Power/Menu/Enter ● Key2 : Volume Up/Up ● Key3 : Volume Down/Down
19	Video compatibility	● NTSC: M(3.58MHz), 4.43MHz ● PAL: B, D, G, H, I, M, N
20	Main Controller	● System controller: TW8816+TI(FPGA) ● Media controller : GM7020 ● Internal storage: Micro SD size: 4Gbytes
21	Multimedia Format	● Video: MPEG4(ISO/IEC 14496-2) QVGA video decoder XVID simple profile L0~L3 standard. ● Photo: JPEG, BMP

1-2 Compatible Mode

Computer compatibility

Compatibility	Resolution	V-Sync [Hz]	H-Sync [KHz]
VGA	640×480	60	31.5
SVGA	800×600	60	37.9

Chapter 2

Disassembly Process

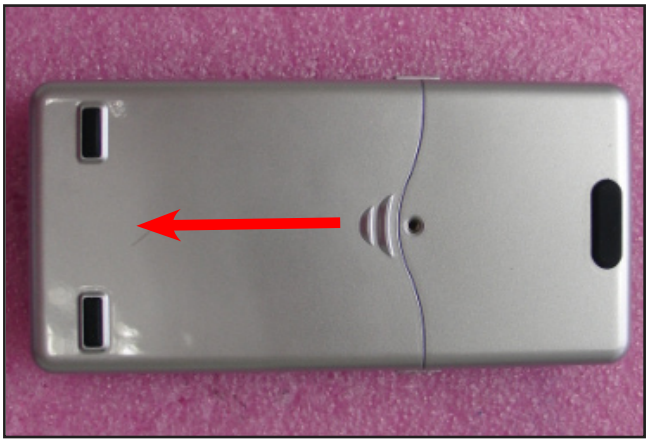
2-1 Equipment Needed & Product Overview

1. Screw Bit (+): No.1
2. Screw Bit (+): No.00
3. Screw Bit (-) : 1.4mm
4. Tweezers (Wide flat-head tweezers)
5. PK-102 unit

** Before you start: This process is protective level II. Operators should wear electrostatic chains. Set the screwdriver's torque to 0.5-0.6 kgf-cm.*

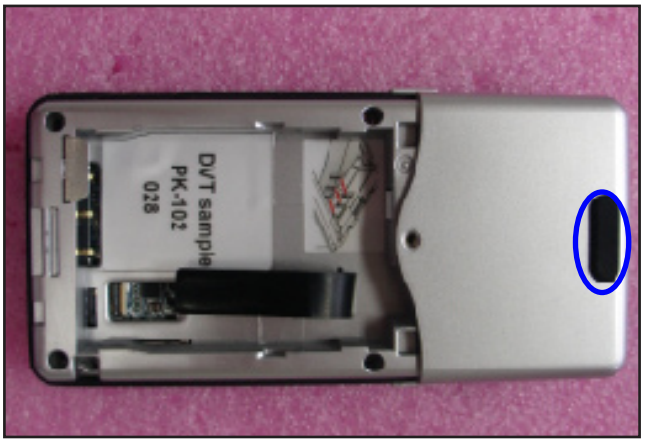
2-2 Disassemble Battery Cover and Battery Module

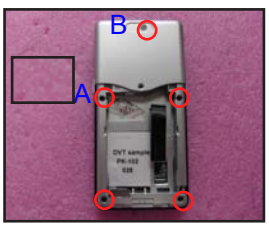
1. Disassembly the Battery Cover Module (as red arrow direct).
2. Remove the Battery.

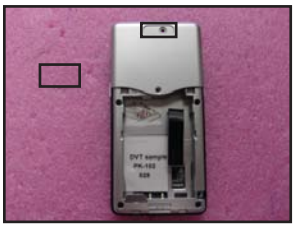


2-3 Disassemble Bottom Cover Module

1. Tear off the rubber (as blue circle).
2. Unscrew 5 screws from the Bottom Cover (as red circle).

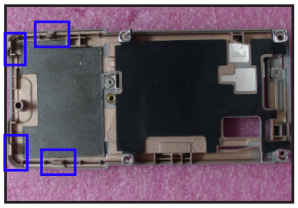






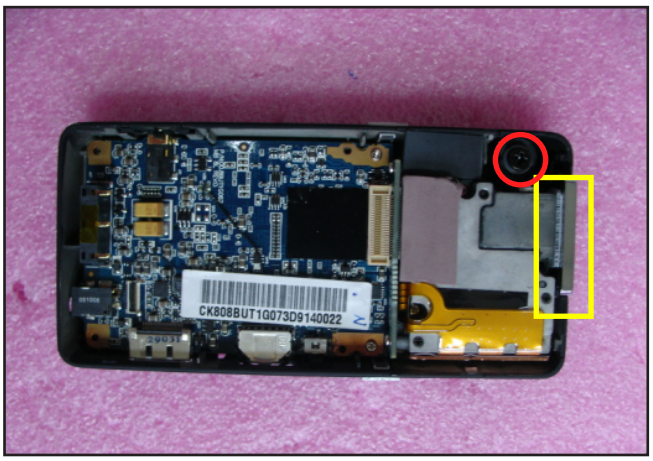
3. Disassemble Bottom Cover Module and AV Jack Cover.

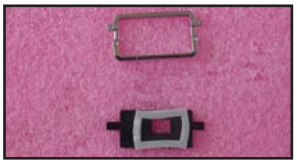
Note: - There are 4 tenons (as blue square) at the bottom cover, when disassembling it, please be carefull to avoid damaging the bottom cover.

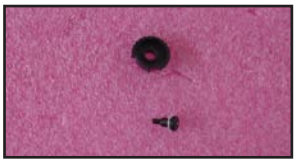


2-4 Disassemble Lens and Focus Ring

1. Disassemble the Lens Deco and Deco Inner (as yellow square).
2. Unscrew 1 screw (as red circle) to disassemble the Focus Ring.

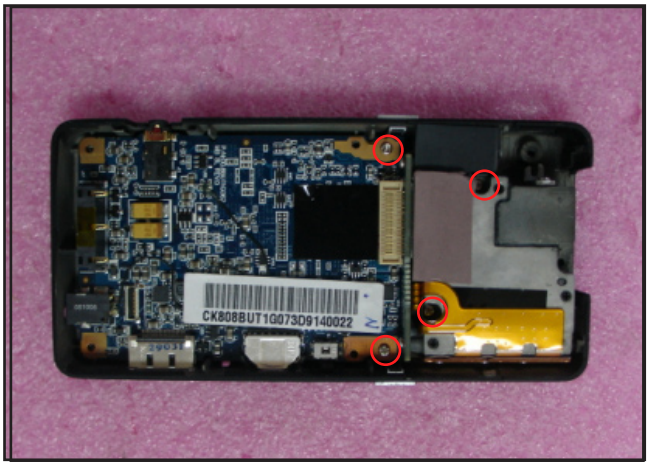






2-5 Disassemble Engine Module and Main Board Module

1. Unscrew 4 screws (as red circle).
2. Disassemble the Engine Module and Main Board Module from the Top Cover Module.



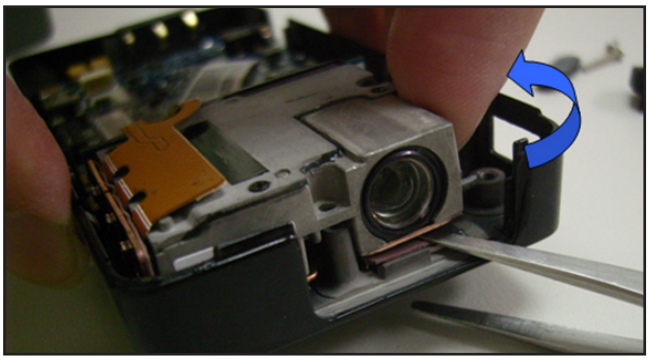
Note: - To avoid breaking the thermal pads, you must use a Wide flat-head tweezers to separate engine module and thermal pad from right edge.

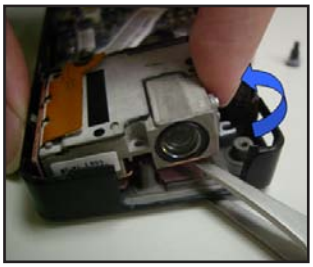
- After the right side of the engine module separate from the thermal pad, remove the tweezers towards left side gradually.

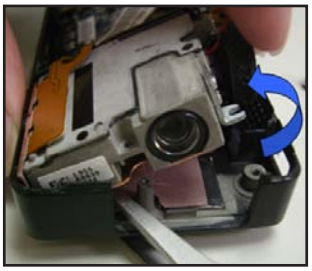
- pushed up the engine and main board module simultaneously, make sure separate them completely.

- If the thermal pads and graphite plate broken during disassembling process, please change them.

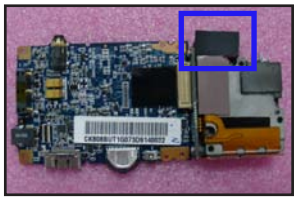
- After sticking the changed graphite plate on the top cover, please press lightly to avoid it warping.

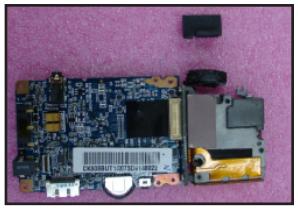


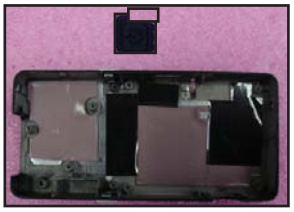




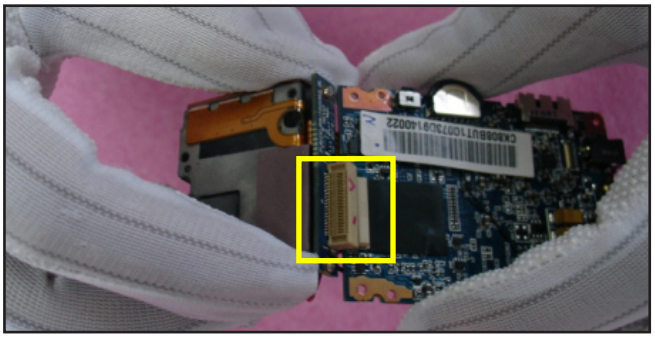
3. Disassemble mylar from the speaker (as blue square).
4. Disassemble the power switch (as yellow circle).



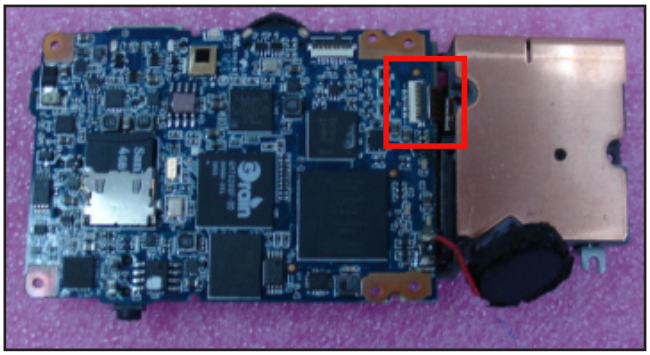




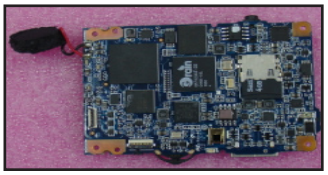
5. Unplug 1 connector (as yellow square).



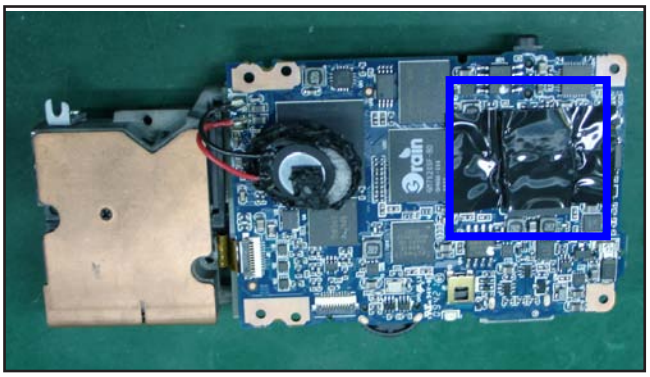
6. Turn the Engine Module and Main Board Module to backside and unplug 1 connector (as red square).



7. Separate the Engine Module and the Main Board Module.



8. Tear off the 3M tape from the Main Board Module (as blue square).



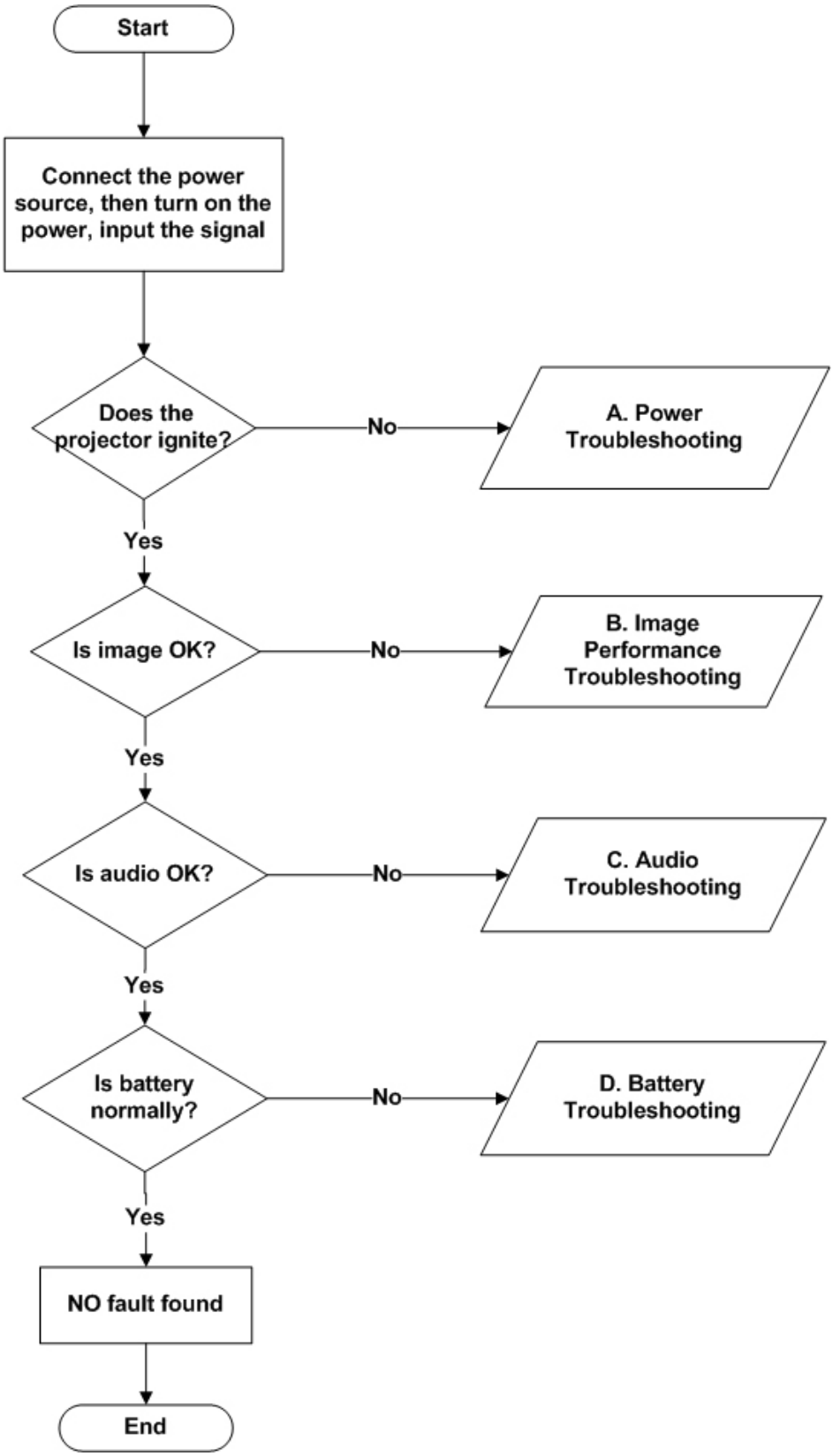
Chapter 3

Troubleshooting

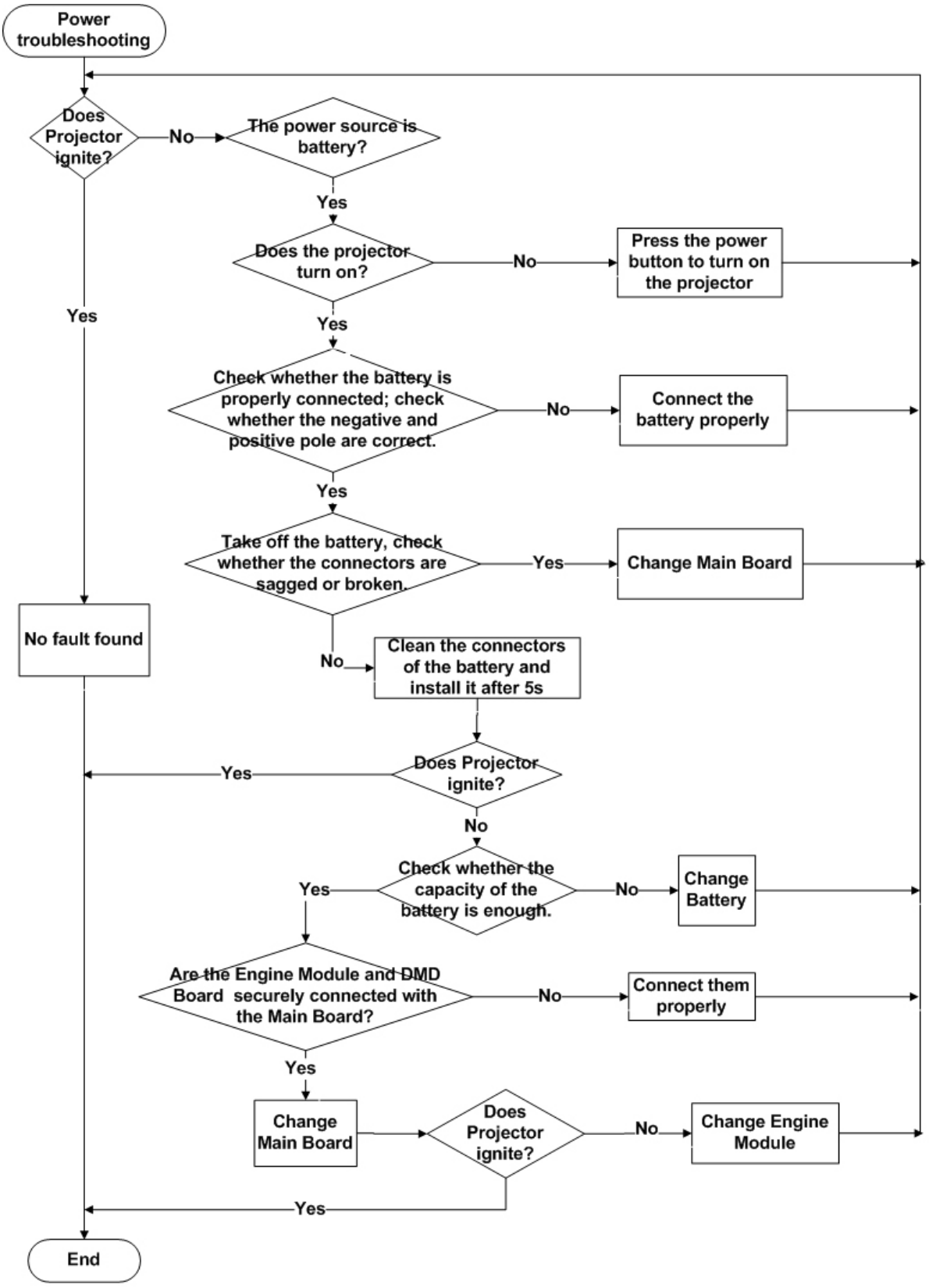
3-1 Equipment Needed

1. Projector
2. DVD player
3. Screw drivers
4. Power adapter
5. Voltage test meter

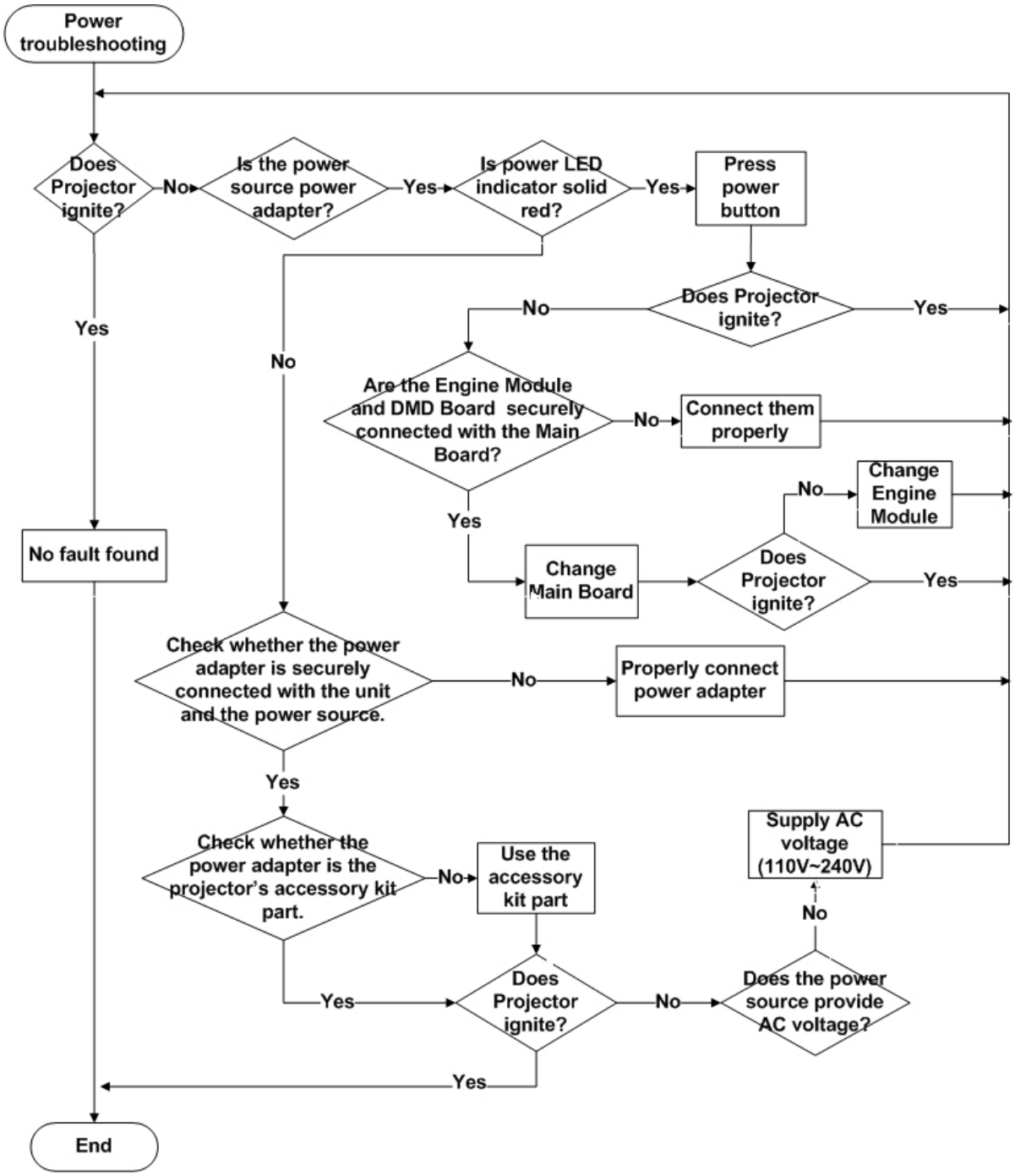
3-2 Main Procedure



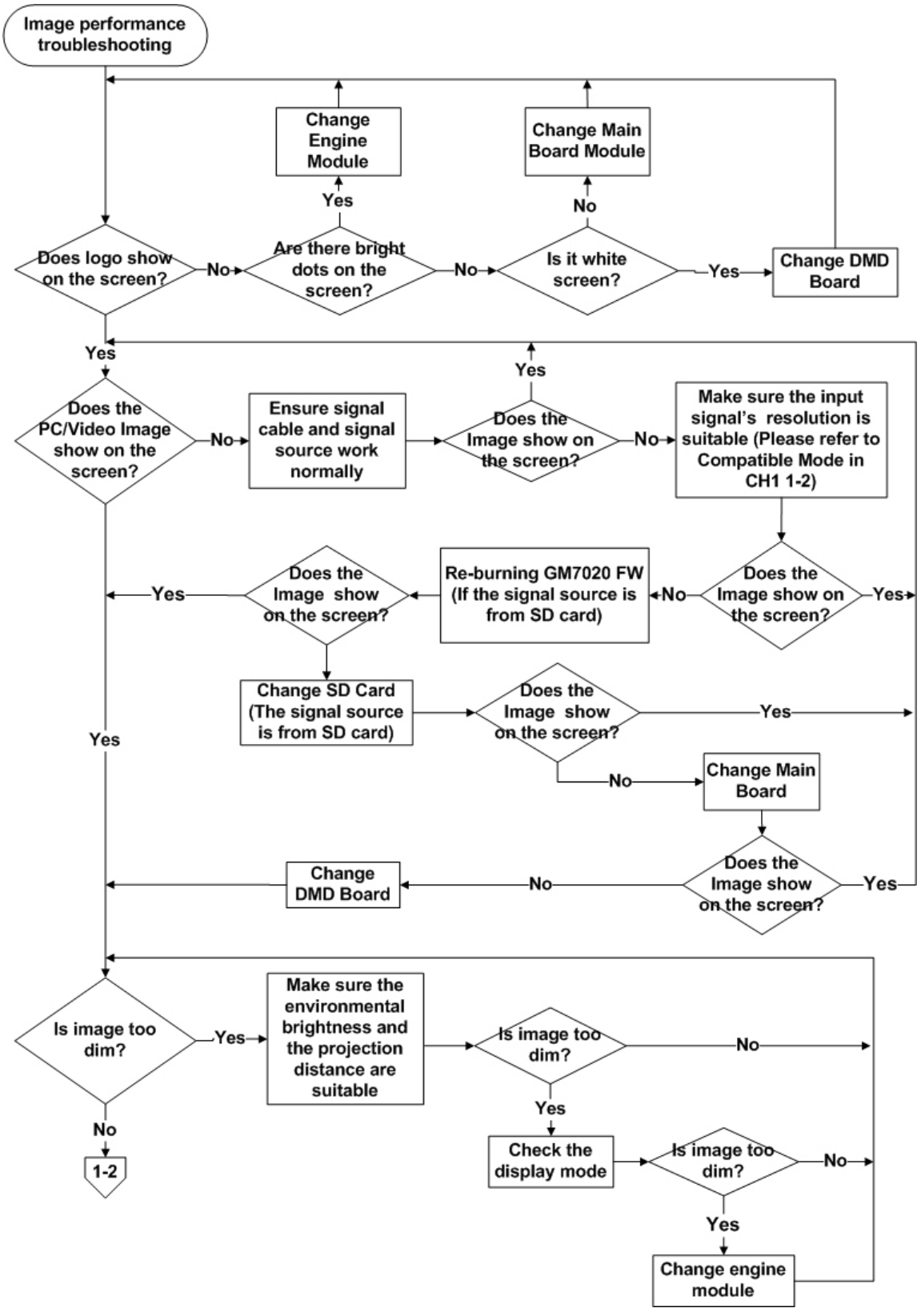
3-3 Power Troubleshoting (Battery)



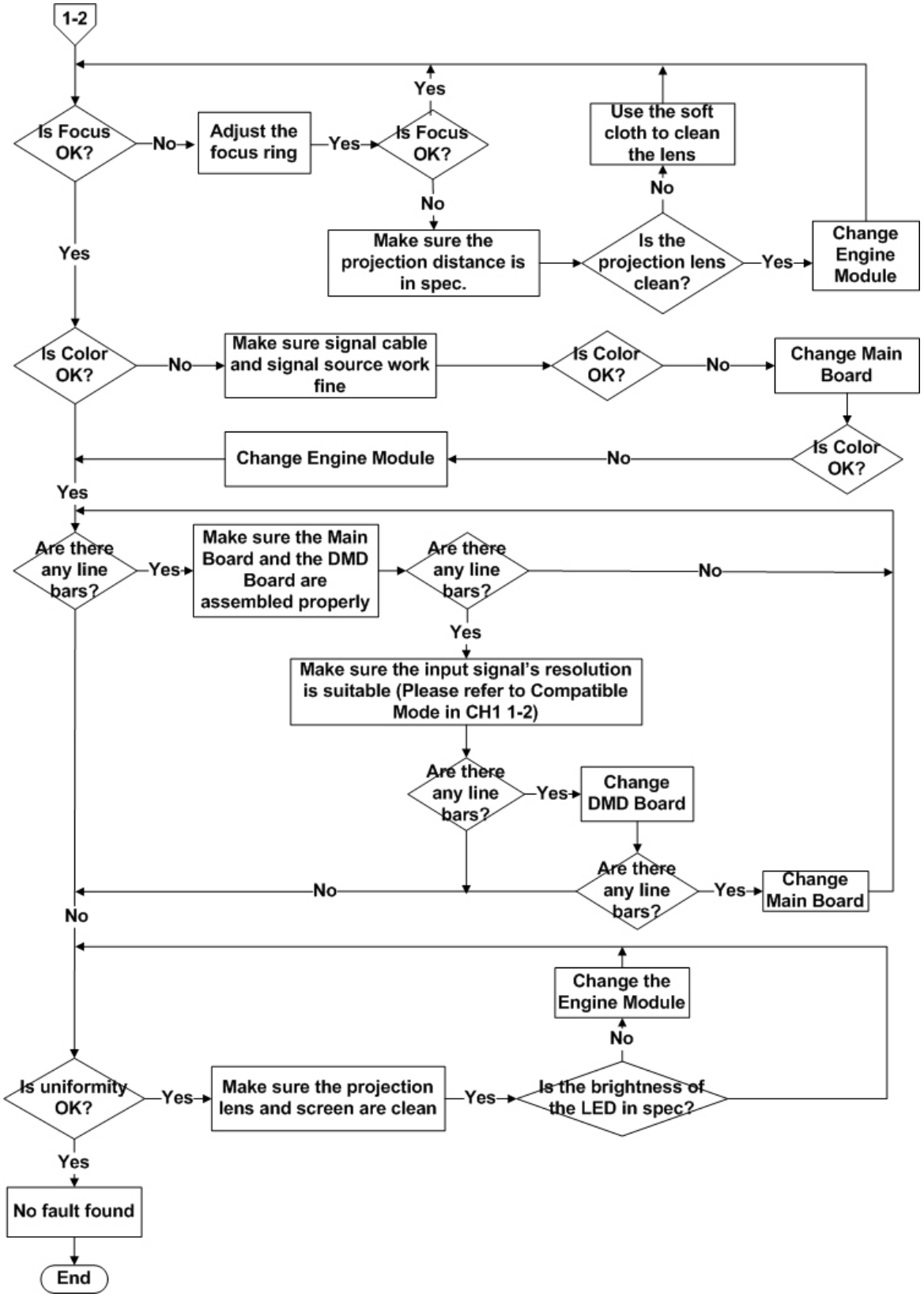
3-3 Power Troubleshooting (Power Adapter)



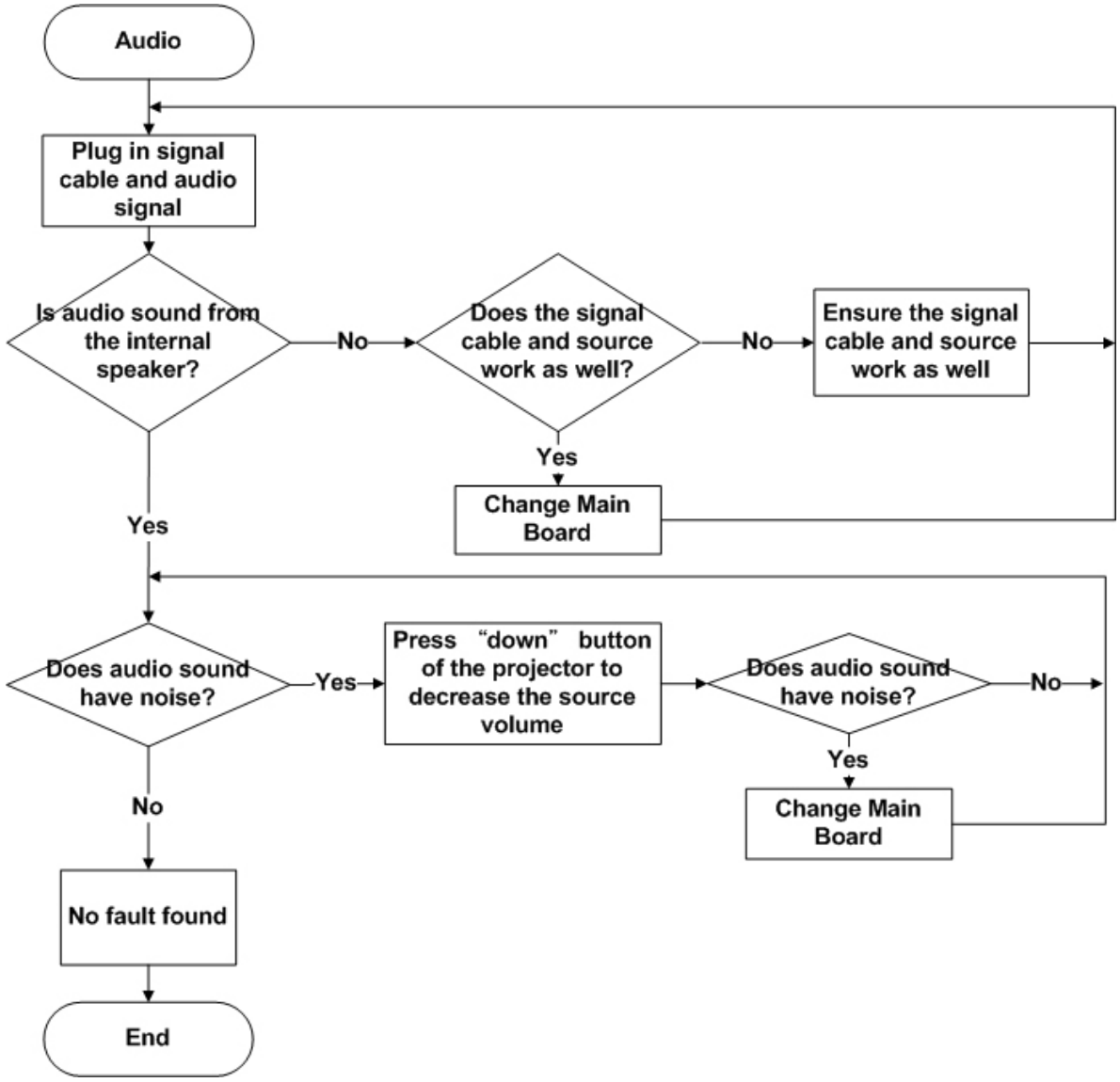
3-4 Image Performance Troubleshooting



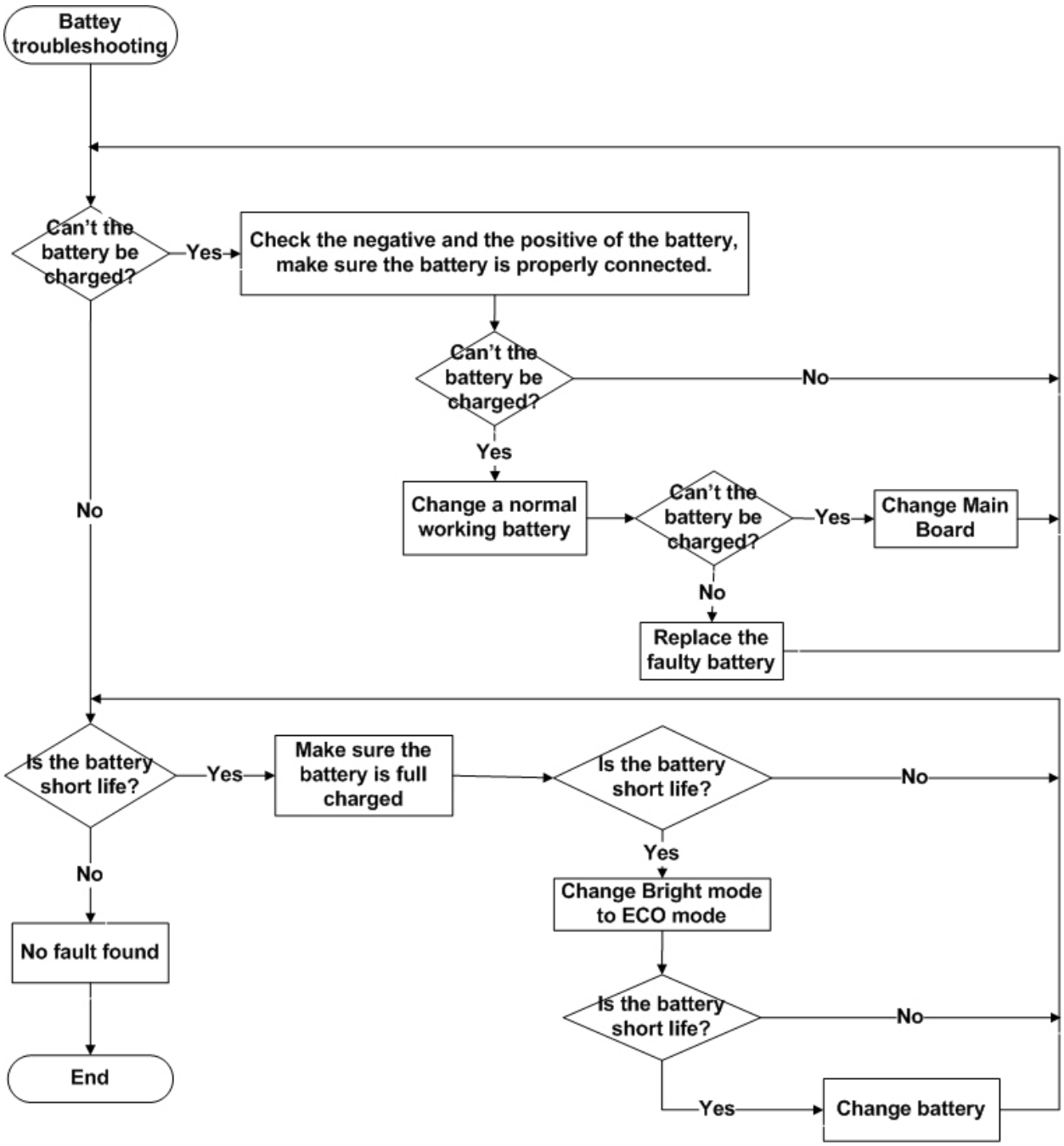
3-4 Image Performance Troubleshooting



3-5 Audio Troubleshooting



3-6 Battery Troubleshooting



Chapter 4

Function Test&Alignment Procedure

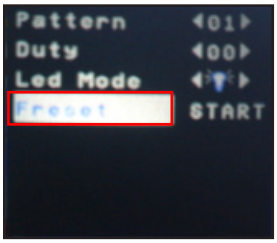
4-1 Test Equipment Needed

- DVD player with Multi-system (NTSC/PAL)
- Equipped "Component", "S-Video" , "Composite"
- Minolta CL-100
- Quantum Data 802B or CHROMA2327 (Color Video Signal & Pattern Generator)
- Remote control (P/N: 45.89Z01G001 only for PK-102 test using)
- PK-102 universal to VGA cable (P/N: 42.00206G001-B)
- Mini JACK-M to 3*RCA-F R/W/Y cable (P/N: 42.00235G001-B)
- PK-102 universal to USB cable (P/N: 42.00288G001-B)

4-2 Service Mode

1. Turn on the projector
2. Do the following actions sequentially to get into service mode
- Press "VGA" button on remote control
- Service mode will be shown
- After confirm the configutation, press "Menu" to exit

4-3 Factory Reset



1. The following actions will allow you to erase all end-users' settings and restore the default setting:

(1) Press "VGA" button on remote control to get into service mode.

(2) Press "Select"->"Down"->"Down"->"Down"->"Select" button of the remote control to execute Freset function.

(Such as:)

4-4 Test Condition

- Circumstance brightness: Dark room less than 0.1 lux.

- Inspection distance: 0.8 M~1 M functional inspection.

- Screen size: 20 inches diagonal

- Connect the power adapter to "dc in" port of the projector

- After repairing PK-102, the unit should be run-in (refer to the below table)

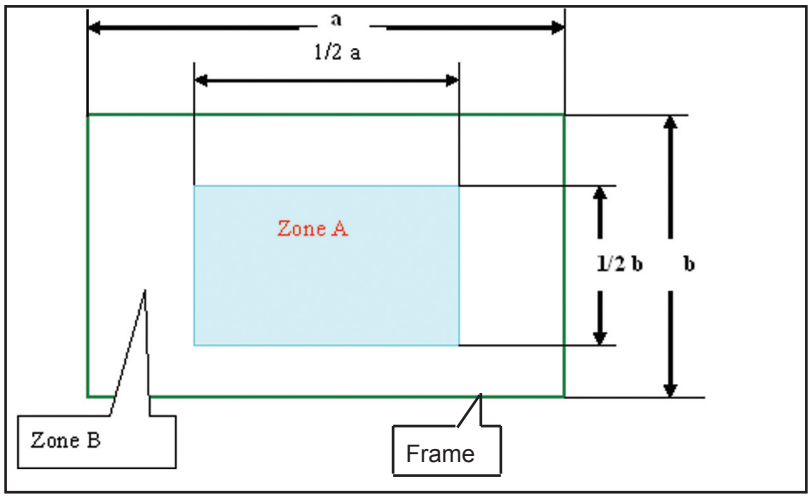
Symptom	Run-in Time
Normal repair	2 hours
NFF	4 hours
Auto shutdown	6 hours

- Get into Burn-In Mode

** Cycle setting is based on the defect symptoms. ie: If it is NFF, the run-in time is 4 hours. You have to set the lamp on for 60 minute for 4 cycles.*

Press VGA->Down, Choose "Burn-in" Pattern	
Press "Select->Select", Choose "On (M)"	
On (M)	Press right key to adjust the time(55)
Off (M)	Press right key to adjust the time(5)
Cycle	Press right key to adjust the cycle
BurnIn	Press right key to adjust the "BurnIn" state (On)
After setting up the time, Press "down" key to select "enter" and press "select" button	

Screen Defects (While replacing Engine Module, DMD Board and Main Board)



< Figure: Zone A, Zone B & Frame (as green line) Definition, Active area=Zone A+ Zone B >

Defect specification table

Order	Symptom	Pattern	Criteria
1	Bright pixel (dots)	Gray 10	A+B≤1
2	Dark pixel (dots)	White pattern	A+B≤6
3	Unstable pixel (dots)	Any pattern	A+B≤1
4	Adjacent dark pixel (dots)	Any pattern	A+B=0
5	Bright dot on frame	Gray 10	≤1

4-5 Test Inspection Procedure

- After changing parts, check the information below

Update	Change parts	
	Main Board Module	Firmware
Version Update	V	V
Factory Reset	V	V
EDID	V	

4-6 Power and LED Indicator

Procedure - Link ‘‘dc in’’ port of the projector to the power supply.

Inspection item - Check whether the LED indicator shows normally.

Criteria - When the projector in standby mode, check whether the LED indicator flashing orange.

- Press the ‘‘Power’’ button, check whether the projector can turn on or off normally.

4-7 PC Mode

1. Focus test

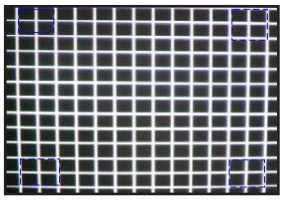
Procedure
- Turn on projector, press "VGA->Select ->Select" button on the remote control to select the "pattern" item then press "Right" button to select the full screen of the projector itself to test.
- Test Pattern: Full screen, Linearity

Inspection item
- Focus check

Criteria
- From screen 0.8 M~1 M via visual to check the pattern, make sure the word of the full screen pattern should be clear and recognizable.
- If the full screen pattern can't be focusing clearly, please move the projector backwards or forwards about 15cm (the moving distance can not exceed 15 cm), recheck the blurred area. Make sure the blurred words can be adjusted clearly and recognizably between the moving procedures.
- If the blurred area can't be adjusted clearly after moving, please press the "left" or "right" button on the Remote Control to select the linearity pattern to test.
- It is unacceptable if there are any lines or abnormal color in A, B, C, D regions of linearity pattern.

Note: the sizes of A, B, C, D's region is extended from the four corners of the box around 1mm.

Full screen



Linearity

2. Bright Pixel

Note: Link Chroma VGA port to the "VGA/USB IN" port of the projector by universal to VGA cable.

Procedure
- Test equipment: video generator.
- Test signal: analog 800x600@60Hz.
- Test Pattern: gray 10

Inspection item
- Bright pixel check.

Note: Frame dimension under operative zone1 inch.

Criteria
- The number of the bright pixels should be less or equal to 1 pixels.
- Ref. below table

Note: The defect criteria follows TI specification.

Gray 10

3. Dark Pixel

Procedure
- Test equipment: video generator.
- Test signal: analog 800x600@60Hz.
- Test Pattern: full white

Inspection item
- Dark pixels check.
- White pattern (IRE=100)
- Adjacent dark pixel.

Criteria
- The number of the dead pixels should be less or equal to 6 pixels.
- Adjacent pixel with each other is unaccepable.
  Note: The defect criteria follows TI specification..

Full white

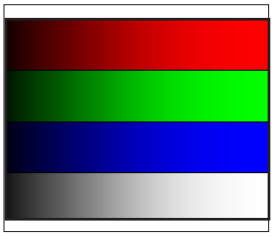
4. Color performance

Procedure
- Test equipment: video generator
- Test signal: Analog 800X600@60HZ
- Test Pattern: 64 gray RGBW, SMPTE RP-133

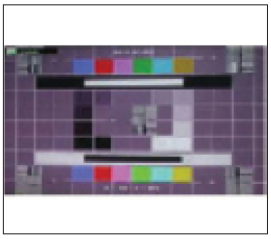
* Please refer to 4-2 to get into service mode. Use test signal to do the test. Color cannot dis-color to purple and blue.

Inspection item
- Check if each color level is well-functioned.
- Color saturations

Criteria
- Screen appears normal. It should not have any abnormal condition, such as lines appear on the screen and so on.
- Color appears normal.
- RGBW should all appear normal on the screen and sort from R -G-B-W.
- Color levels should be sufficient and normal.



64 gray RGBW



SMPTE RP-133

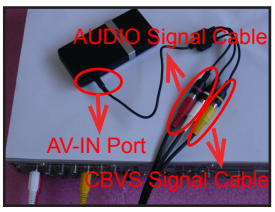
5. Charging or Discharging Founction Test

Inspection item
- Projector charging or discharging test

Criteria
- Install the battery into the projector, plug the adapter, confirming the red LED is lighting, check whether the charging function is normal.
- In the charging procedure, check whether the green LED is lighting and the charging is complete.
- Unplug the power adapter, turn on the projector to check if the discharging is normal.

4-8 Video Performance

*Note: Plug JACK-M to 3*RCA-F R/W/Y cable into the AV-IN port of projector, the CBVS signal and Audio signal will be inputted.Then turn the sound of DVD player down.the signal test is as follows.*



1. ECO/Bright Mode Function Test

Turn on the projector, press "Menu"key on remote control, the OSD menu will show on the screen, then press "Left"/"Right" button on remote control to check Bright mode/ECO mode exchange is normal.

2. CVBS

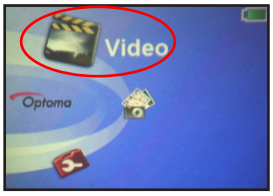
Procedure	- Test equipment: DVD player
	- Test signal: CVBS
Inspection item	- Video performance test
Inspection Distance	- 0.8 M ~1.0 M
Criteria	- Check any abnormal color, line distortion or any noise on the screen.
	- Check the sound from speaker.

Motion video

3. Audio Test

Procedure	- Test equipment: DVD player
	- Test signal: CVBS
Inspection item	- Audio performance test
Inspection Distance	- 0.8 M ~1.0 M
Criteria	- Check the sound from speaker
	- Press "Up" button of the projector to modulate the volume to 20, then press "down" button to modulate the volume to 18, check whether the volume is normal.

4-9 SD Card Test



1. Turn on the projector and unplug signal cable, select “Video“, play the video file in it:
   - Check any abnormal color, line distortion or any noise on the screen.
   - Check the sound from speaker.

2. Turn on the projector, connect VGA/USB IN port of the projector and PC USB port by universal to USB cable:
   - Check whether PC can detect the SD card information.

4-10 Optical Performance Measure

Inspection Condition
- Environment luminance: 0.1 Lux
- Product must be warmed up for 2 minutes
- Distances from the screen: 0.8 M~1 M
- Screen Size: 20 inches diagonal

1. Test equipment

Procedure

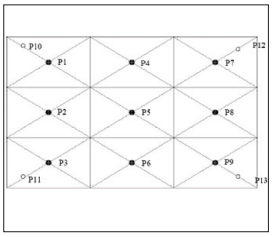
- Please get into bright mode, focus should be clear, the display format is 3:2.
- Press “VGA->Select->Down->Down” on remote control, then press “Left” or “Right” to select full white and full black pattern, then start signal test.

2. Brightness

Procedure
- Full white pattern
- Use CL100 to measure brightness values of P1~P9.
- Follow the brightness formula to calculate brightness values.

☼ Brightness Formula

Avg. (P1+P2+P3+...+P9) x 0.12



Full white pattern

Criteria
- 6.0 ANSI Lumens

3. Full On/Full Off Contrast

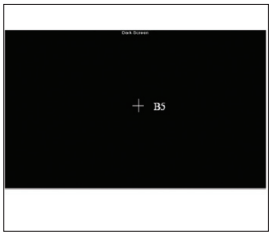
Procedure
- Full white pattern & full black pattern
- Use CL100 to measure brightness values of full white pattern P5 & full black pattern B5 (see image: full white)
- Follow Contrast formula to calculate contrast values.

☼ Contrast Formula

P5/B5

Note: P5=center of white image

B5 = the center of black image.



Full black pattern

Criteria
- 800:1

4. Uniformity

Procedure
- Full white pattern
- Use CL100 to measure brightness values of P1~P9 (see image: full white).
- Follow the Uniformity formula to calculate average values.

☼ Uniformity Formula

ANSI Uniformity = Avg.(P1,P3,P7,P9)/P5×100%

Criteria
- 50 %

4-11 Others

1. Function Inspection

General	- All OSD functions must be checked for functionality. When OSD menu is displayed, there shall be no visible peaking, ringing, streaking, or smearing artifacts on the screen.
Factory Default	- The factory settings (with appropriate centering, size, geometry distortion, etc.) shall be displayed upon “Re-call” is selected from OSD
Display Size	- All preset modes shall expand to full screen size using OSD Horizontal and Vertical Size controls
Display Data Channel (DDC)	- The purpose of the DDC test is to verify the DDC1/ DDC2B operation of the projector and to verify Plug & Play function.

2.Check points for exterior and print pattern

Check item	Check point
Text & Pattern	missing letters & pattern or blurry prints are unacceptable.
Exterior	dirt, scrape, water ripples and uneven color are unacceptable.
Buttons	stuck buttons are unacceptable.
Focus Ring	Focus ring is functioning smoothly.
Logo	missing logo, missing prints and blurry prints are unacceptable
Screw	All screws sure be fixed and in right type.

Chapter 5

Firmware Upgrade

Section 1: System Firmware Upgrade

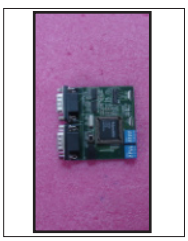
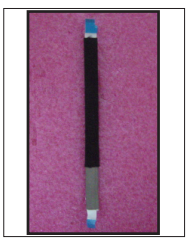
5-1 Equipment Needed

Software :

- PK-102_FW_All_XX.bin

Hardware :

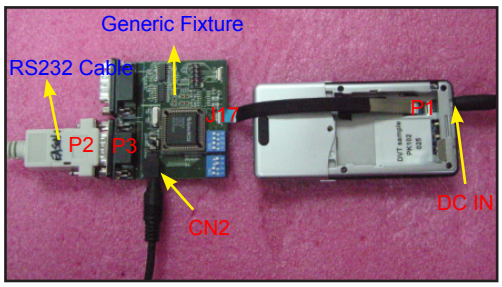
- Projector (PK-102)
- Monitor
- PC
- Power cord & Power adapter for generic fixture: (P/N: 42.00147G001 & 47.8CR02G001)
- Generic Fixture for FW Upgrade
- FPC
- Cable RS-232 9P (F) to 9P (F) (P/N:42.85H02G001)
- Power adapter for projector (P/N: 47.8BU11G001&47.8BU12G001)

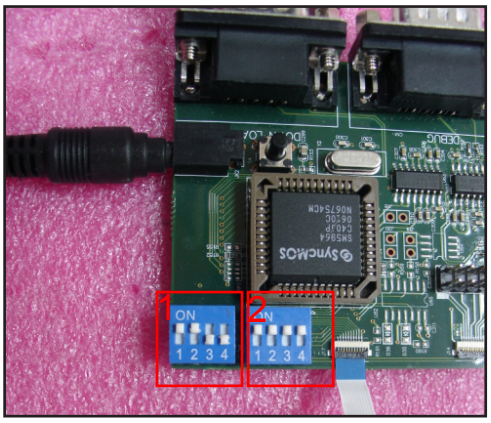



5-2 Setup Procedure

1. Connect all ports

- Disassemble the Battery Cover and remove the Battery.
- Connect RS232 P2 Port to P3 Port of Generic Fixture
- Connect J17 Port of Generic Fixture and P1 port of Projector by FPC Cable
- Connect CN2 Port of Generic Fixture to the Power adapter for generic fixture.
- Connect " DC IN " Port of the Projector to the Power adapter for projector.





Note1: As the red square 1, the switch of 1 and 2 are "on" state , the switch of 3 and 4 are "off" state;

As the red square 2, the switch of 1, 2, 3, 4 are all "on" state.

Note2: Plug in the power, then the LED will flashing red.

5-3 Firmware Upgrade Procedure

1. Firmware Upgrade Precedure

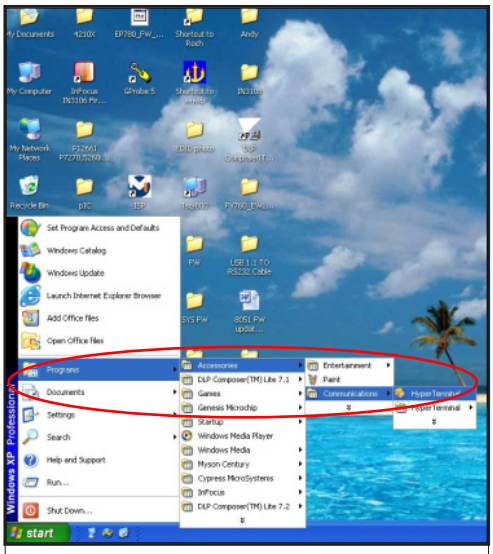
(1) Select "Programs->Accessories ->Communications->Hyper Terminal".

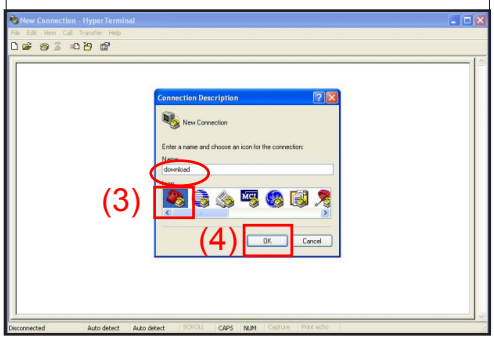
(2) Key in "download".

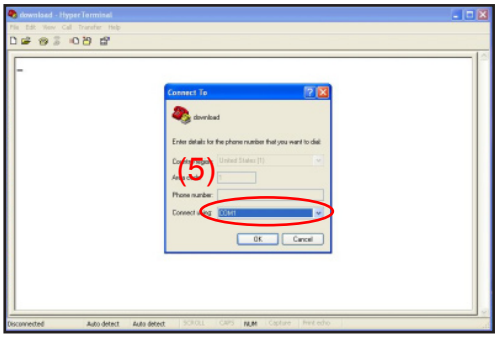
(3) Select " ".

(4) Click "OK".

(5) In the "Connect using" item, please choose the port which you are using.







(6) Select "115200" in the "Bits per second" item.

(7) Select "8" in the "Data bits" item.

(8) Select "None" in the "Parity" item.

(9) Select "None" in the "Flow control" item.

(10) Click "OK".

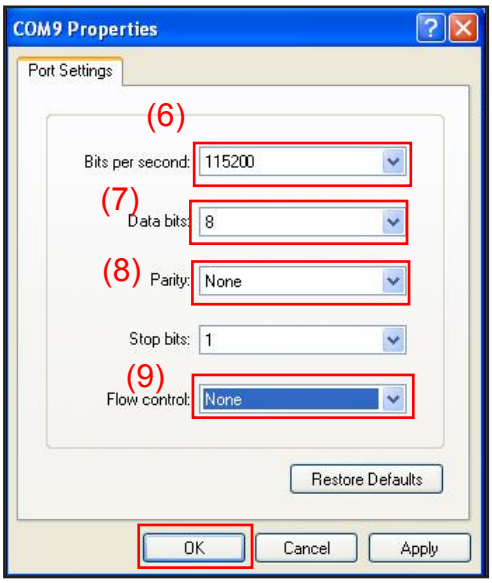
(11) Select " ".

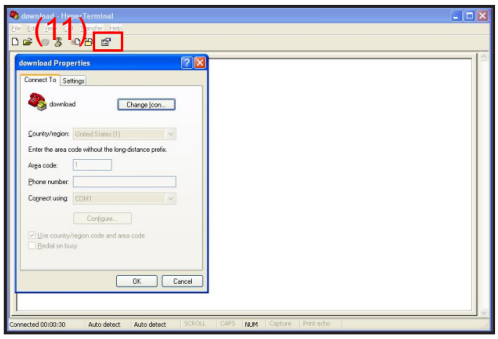
(12) Select "Setting".

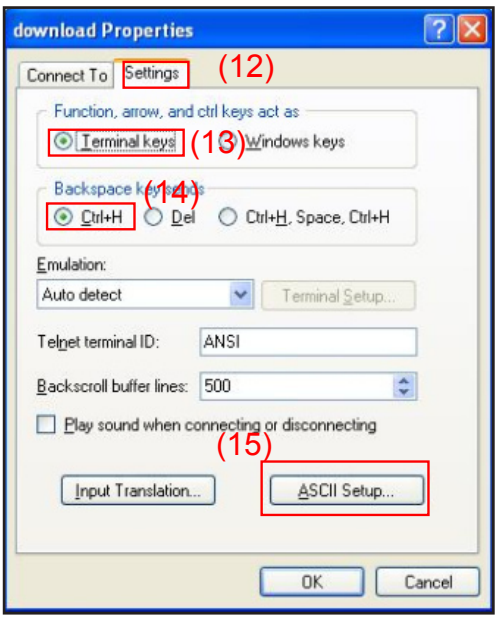
(13) Select "Terminal Keys" in "Function, arrow, and ctrl keys as" item.

(14) Select "Ctrl+H" in "Backspace key sends" item.

(15) Select "ASKII Setup...".







(16) Select "Warp lines that exceed terminal width" in "ASCII Receiving".

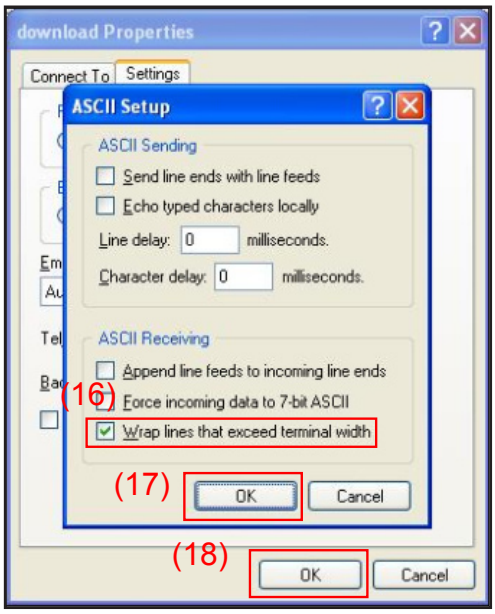
(17) Click "OK".

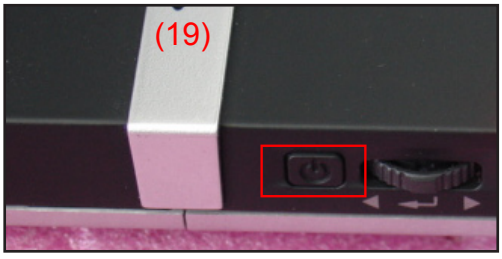
(18) Click "OK".

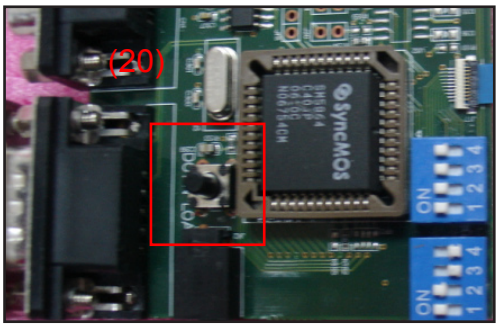
(19) Press "Power" button of the projector.

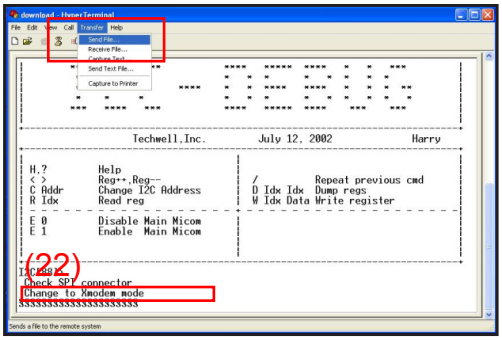
(20) Press "Reset" button on the fixture, then the message "Change to Xmodem mode" will show on the screen.

(21) Select "Transfer->Send File...".









(23) Select "Browse".

(24) Select the file

"PK-102_FW_All_XX.bin".

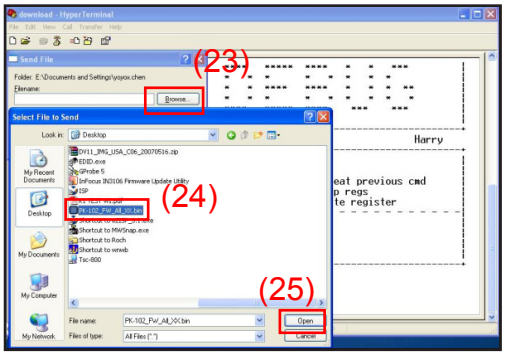
(25) Click "Open".

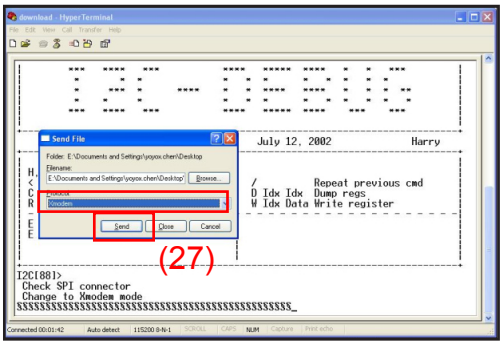
(26) Select "Xmodem".

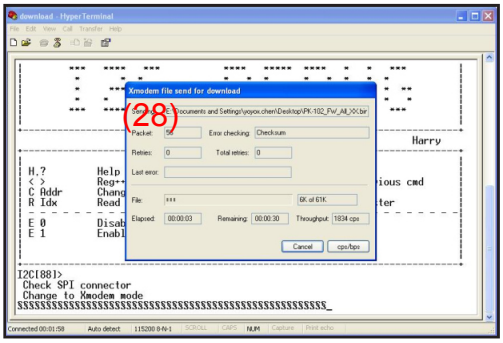
(27) Click "Send".

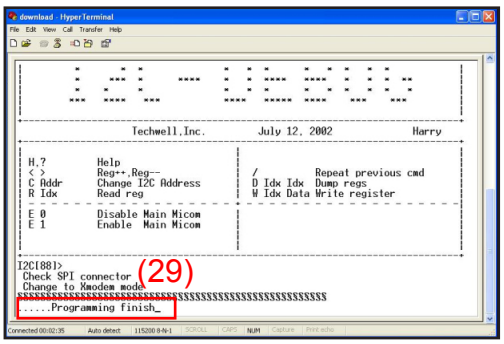
(28) Firmware upgrade will take about 30 seconds.

(29) "Programming finish" information will show out when firmware upgrade procedure is completed.



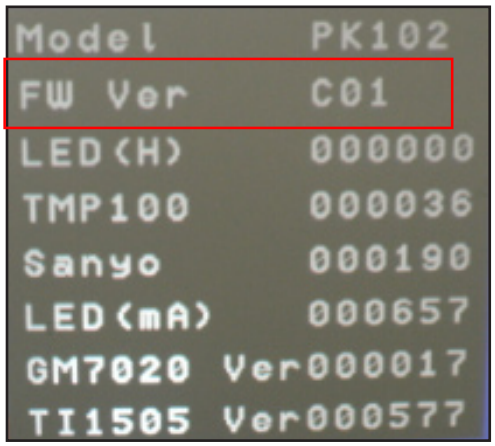






2. Check Firmware Version

- Select "VGA->Down->Down->Select" on remote control to check Firmware Version.



Section 2: GM7020 Firmware and SD Files Upgrade

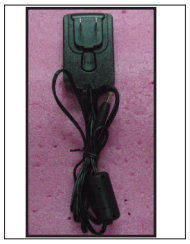
5-4 Equipment Needed

Software :

- PK-102_GM7020 FW_All_XX.bin
- PK-102_SD FILES

Hardware :

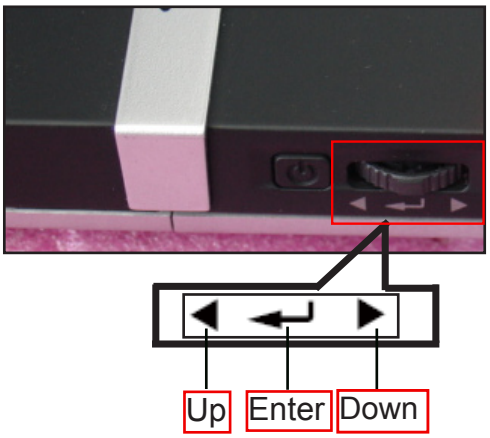
- Projector (PK-102)
- Monitor
- PC
- Universal to USB Cable (P/N: 42.00288G001)
- Power adapter for projector (P/N: 47.8BU11G001 & 47.8BU12G001)



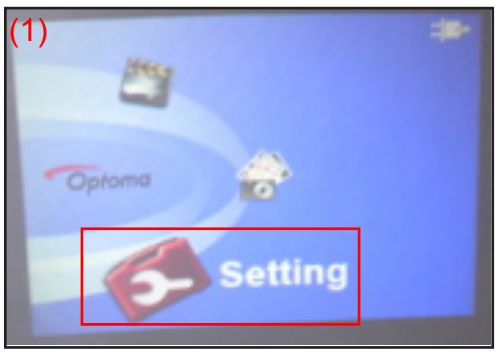
5-5 Setup Procedure

1. Connect Power adapter to P1 Port of the projector.

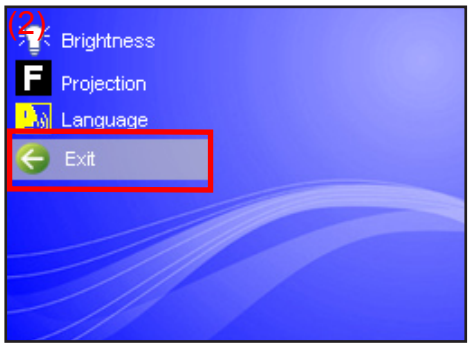
5-6 GM7020 Firmware Upgrade Procedure



1. Turn on the projector, press "Down->Down" key on the projector, select "Setting".

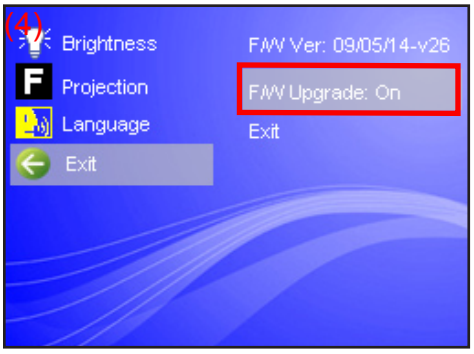


2. Press "Enter" key on the projector, then get into "Setting" menu, press "Down" key, remove the cursor to "Exit".



3. Press "Up->Down->Up->Down->Enter" key on the projector, then the firmware upgrade information will appear.

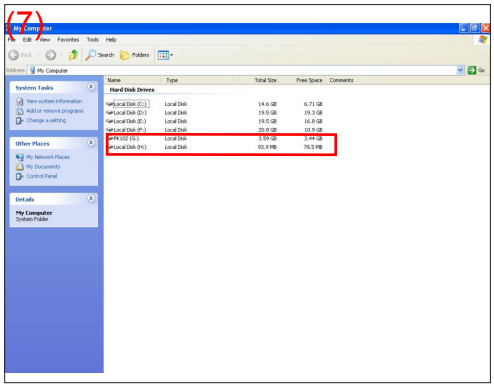
4. Remove the cursor on "F/W Upgrade Off", then press "Enter" key, change "F/W Upgrade Off" to "F/W Upgrade On" state.



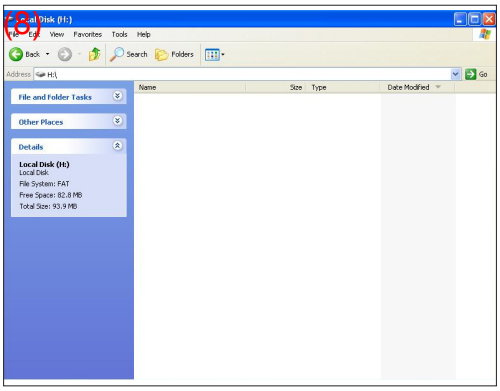
5. Connect PC and VGA/USB IN by USB cable, then the projection picture will disappear, the USB information will appear on PC.

6. Double click "My Computer".

7. There are two new disks appear on "My Computer" window.One of them named "PK102",another one named "Local Disk".

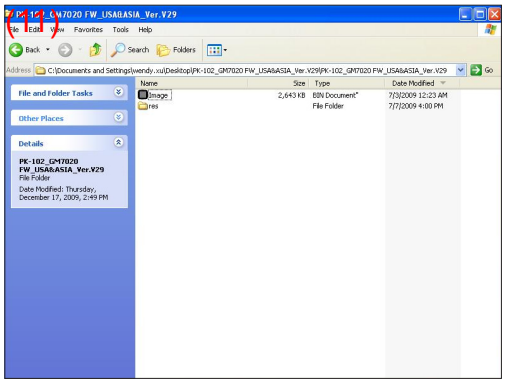


8. Double click "Local Disk (H:)"Disk, and then delete all of the files.
Note: "Local Disk (H:)" represent the location of projector SD card's document.



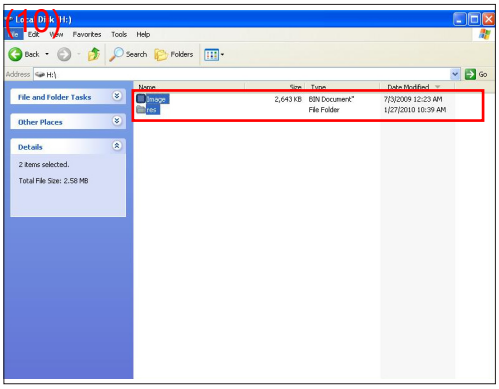
9. Double click the Folder "PK-102_GM7020 FW_All_xx"

10. Select the files "res" and "Image.bin", and copy them.



11. Paste "res" and "Image.bin" to Disk "Local Disk (H:)". GM7020 firmware upgrade complete.

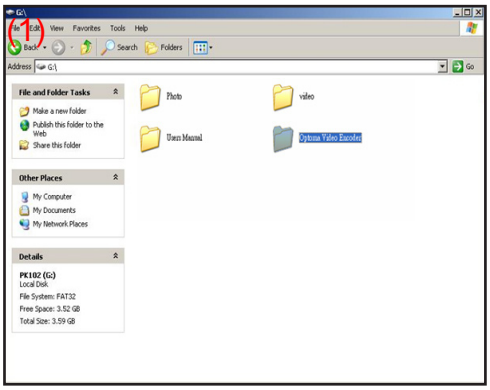
Note: Delete the primary documents first. Do not cover them directly.



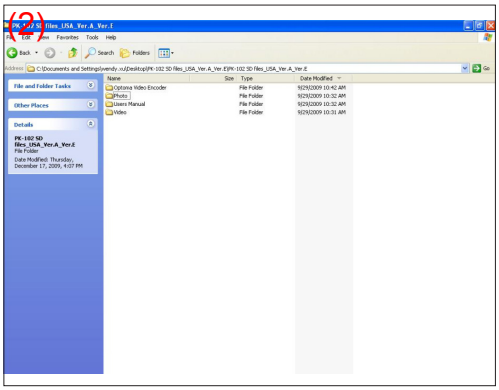
12. Press "Up->Down->Up->Down->Enter" on the projector to check firmware version.

5-7 SD Files Upgrade Procedure

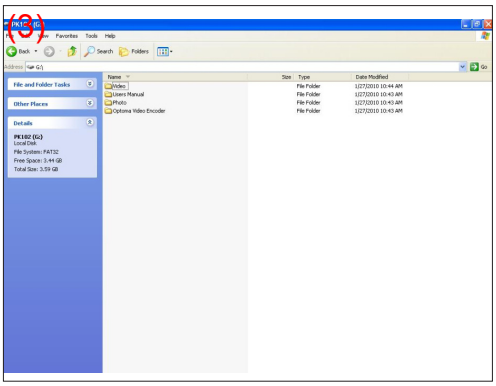
1. Double click Disk “PK102 (G:)”, and then delete all of the files.



2. Double click the Folder "PK102_SD FILES". Then Select Folders "Optoma Video Encoder", "Users Manual", "Photo" and "Video", copy them next.



3. Paste “Users Manual”,”Photo” and “Video” to Disk”PK102 (G:)”. SD Files upgrade complete.



Note1: There are only four Folders in the Disk”PK102 (G:)” after SD Files Upgrade.

Note2: When change the new SD card, you must upgrade the SD files.

Chapter 6

EDID Upgrade

6-1 EDID Introduction

Extended Display Identification Data is a VESA standard data format that contains basic information about a display device and its capabilities, including vendor information, maximum image size, color characteristics, factory pre-set timings, frequency range limits, and character strings for the monitor name and serial number.

The information is stored in the display and is used to communicate with the system through a Display Data Channel (DDC), which sites between the display device and the PC graphics adapter. The system uses this information for configuration purposes, so the monitor and system can work together.

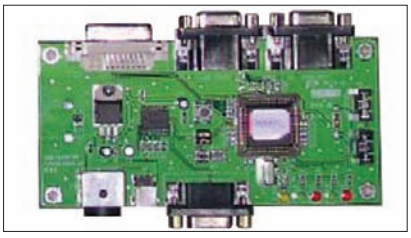
6-2 Equipment Needed

Software

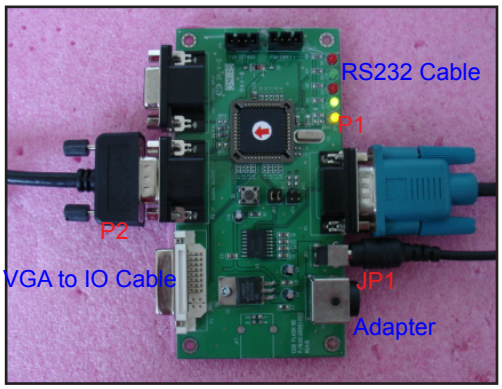
- EDID Program (Generic V0.51)
- EDID File (*.ini)

Hardware

- Projector
- Generic Fixture :80.00001.001 for EDID Key-in (Fixture: JP3 must be closed)
- Power adapter for projector (P/N: 47.8BU11G001&47.8BU12G001)
- Monitor
- PC
- Universal to VGA Cable (P/N: 42.00206G001)
- RS-232 Cable (pin to pin, F-M): 42.83618G001
- Power adapter 2 for fixture: 47.57702G001



6-3 Setup Procedure (VGA Port)



1. Connect all ports
- Power adapter 2 to fixture JP1.
- Fixture P1 to PC COM1 Port.
- Fixture P2 to Projector "pc in" port by VGA to IO cable.
- Connect the power adapter 1 to projector “dc in 5v” port.

6-4 EDID Key-In Procedure (VGA Interface)

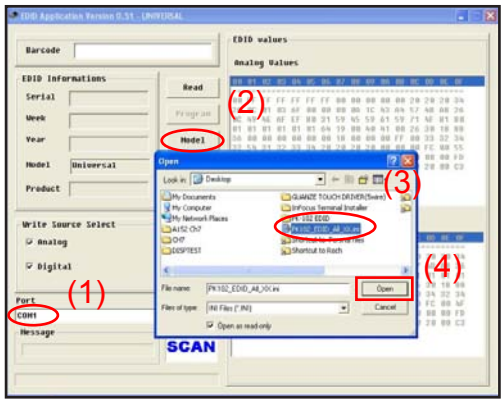
1. Click on "EDID" to execute EDID program.
2. Choose model

(1) In the port selection bar, please choose the port which you are using.

(2) Click on "Model".

(3) Choose the source file "PK-102_EDID_All_XX.ini".

(4) Click "Open".

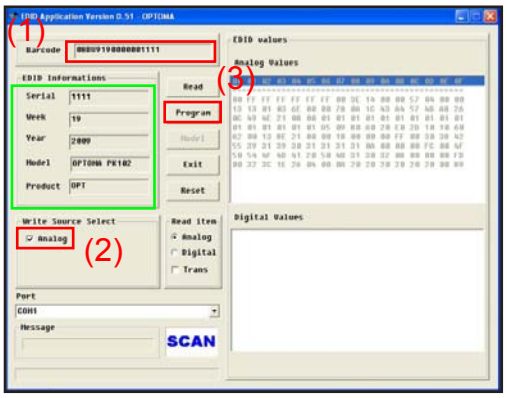


3. Programming

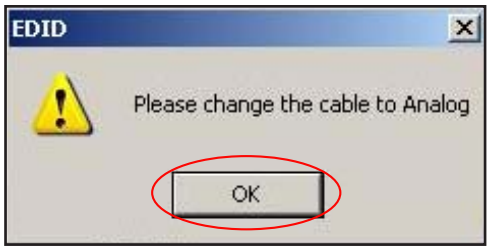
(1) Key in the serial number into the barcode blank space.

(2) In "Write Source Select", make a check in “Analog”.

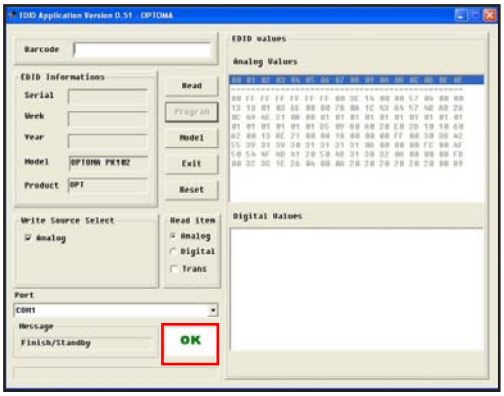
(3) Click "Program".



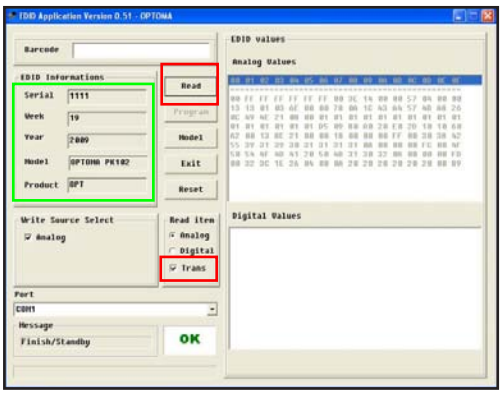
4. When the message “Please change the cable to Analog” is shown on the screen, click “OK” button.



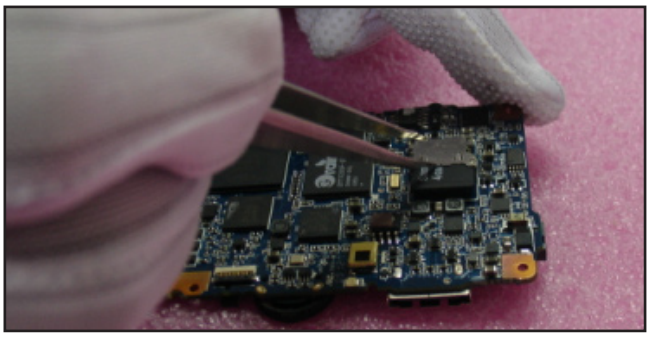
5. When the EDID program is completed, a message "OK" will appear on the screen.

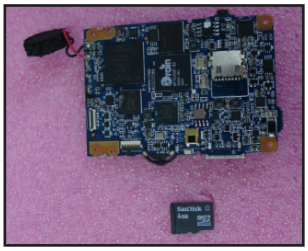


6. Select "Trans" in the read item, and then click "Read" button, EDID informations will show the result.



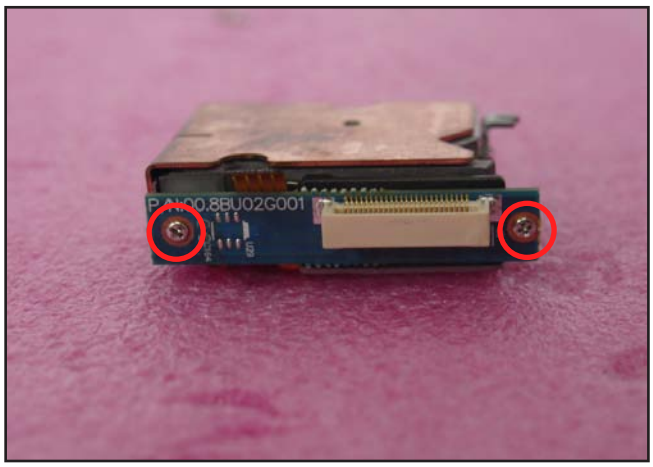
9. Use the tweezers to lift the SD card shielding, disassemble the SD card.





2-6 Disassemble Engine Module and DMD Board

1. Unscrew 2 screws on the DMD Board (as red circle).
2. Separate the Engine Module and the DMD Board.

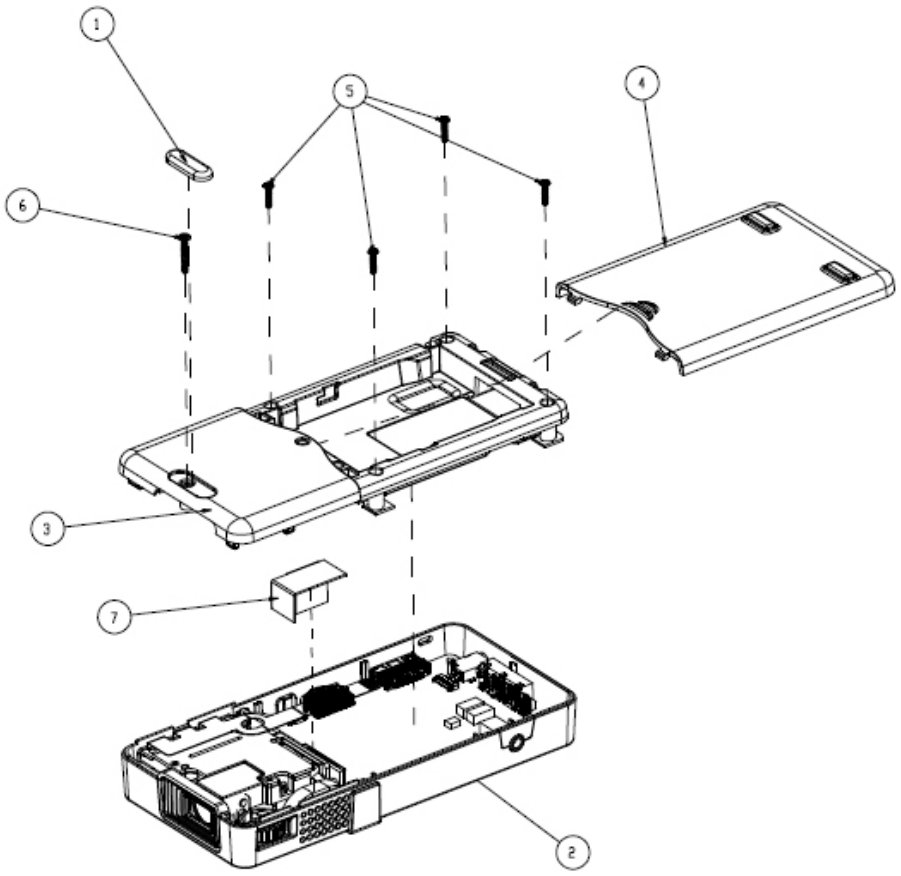


Appendix A

Exploded Image

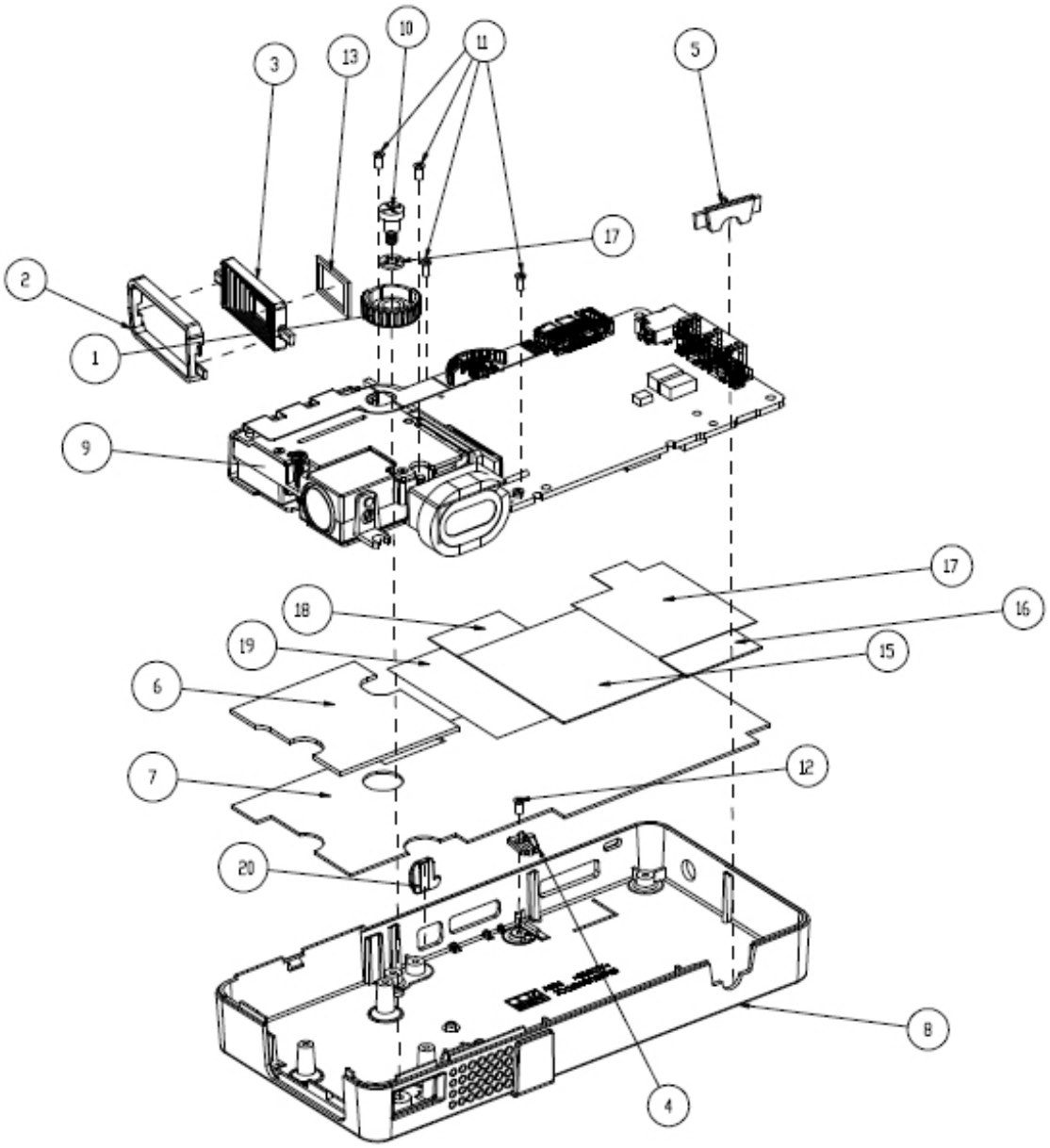
Note: This chapter is only designed to show the exploded image of the projector, for updated part numbers, please refer to RSPL report.

D.C. For PK-102



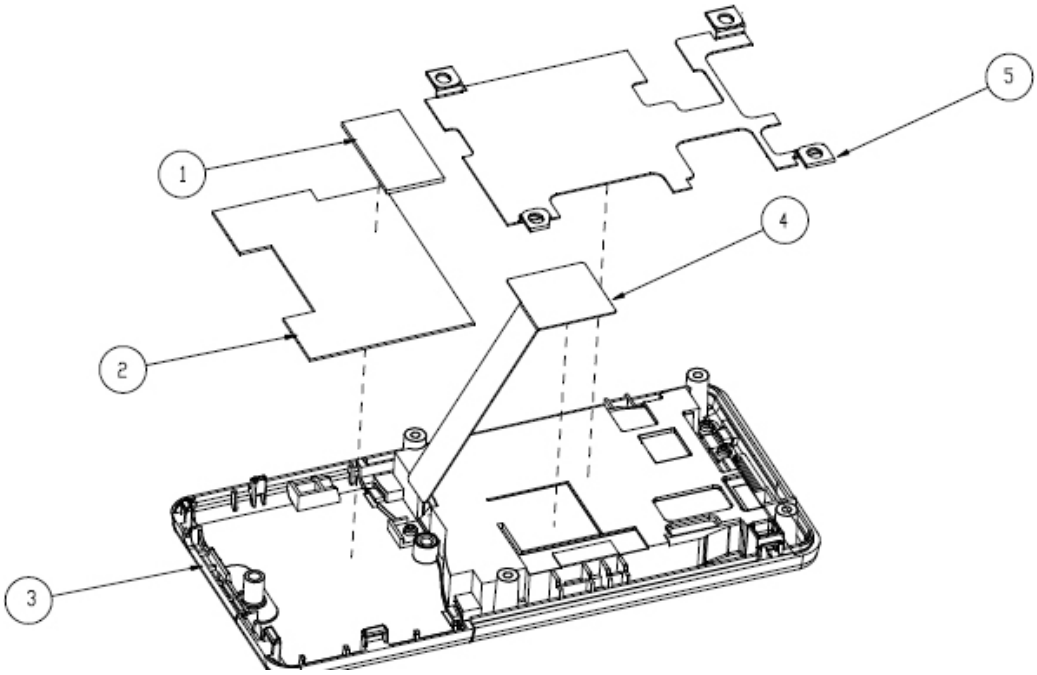
Item	P/N	Description	Parts Supply
1	52.8BU02G001	FRONT RUBBER FOOT SILICON PK-101	V
2	70.8BU13G001	TOP COVER MODULE PK-102	
3	70.8BU14G001	BOTTOM COVER MODULE PK-102	
4	70.8BU18G001	BATTERY COVER MODULE PK-102	
5	85.4A12AG060	SCREW FLAT MACHINE M1.4*6.0 P=0.3	
6	85.4A12AG100	SCREW FLAT MACHINE M1.4*10.0 P=0.3	
7	51.8BU21G001	SPEAKER MYLAR PK-102	

Assy Top Cover Module For PK-102



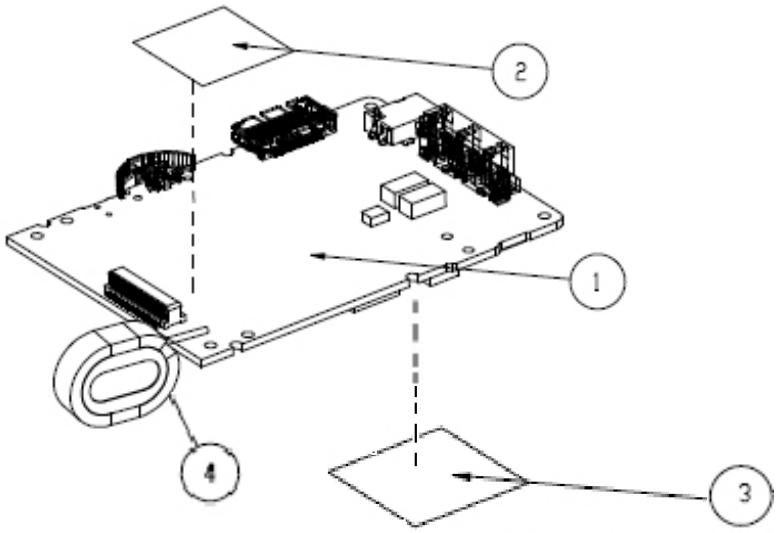
Item	P/N	Description	Parts Supply
1	51.8BU09G001	FOCUS RING MN-3600H PK-101	V
2	51.8BU03G001	LENS DECO ABS PK-101	V
	70.8BU11GR01	ASSY LENS DECO INNER MN-3600H PK-101-(SERVICE)	V
3	51.8BU04G001	LENS DECO INNER MN-3600H PK-101	
4	51.8BU06G001	LED LENS TRANSPARENT PC PK-101	
5	51.8BU08G011	AV JACK COVER MN-3600H PK-101	V
6	52.8BU06G001	OPTICAL ENGINE TOP-FRONT THERMAL PAD, GR-Hm 0.8mm	V
7	52.8BU10G001	TOP GRAPHITE PLATE	V
8	75.8BU02G012	BUY ADD POWER BUTTON TOP COVER MODULE PK-102	
9	70.8BU15G001	MB ENGINE AND MYLAR MODULE PK-102	
10	61.8BU02G001	FOCUS RING STEP SCREW NICKEL M2 WITH NY-LOK PK-101	V
11	85.1A52AG030	SCREW PAN MACHINE M1.4*3.0 P=0.3	V
	70.8BU21GR01	ASSY TOP COVER MODULE FOR PK-102(SERVICE)	
12	61.D0124G001	SCREW CYLINDER MACHINE M1.4*2.5 H=0.3 CR+3	
13	52.8BU11G001	ANTI DUST SPONGE PK-101	
14	87.FL000G035	WASHER PLASTIC 6*3*0.35 PK-101	V
15	52.8BU14G001	PK-102 TOP CENTER THERMAL PAD	V
16	52.8BU15G001	PK-102 TOP REAR THERMAL PAD	V
17	51.8BU18G001	REAR TERAOKA TAPE 0.05MM PK-102	V

Assy Bottom Cover Module For PK-102



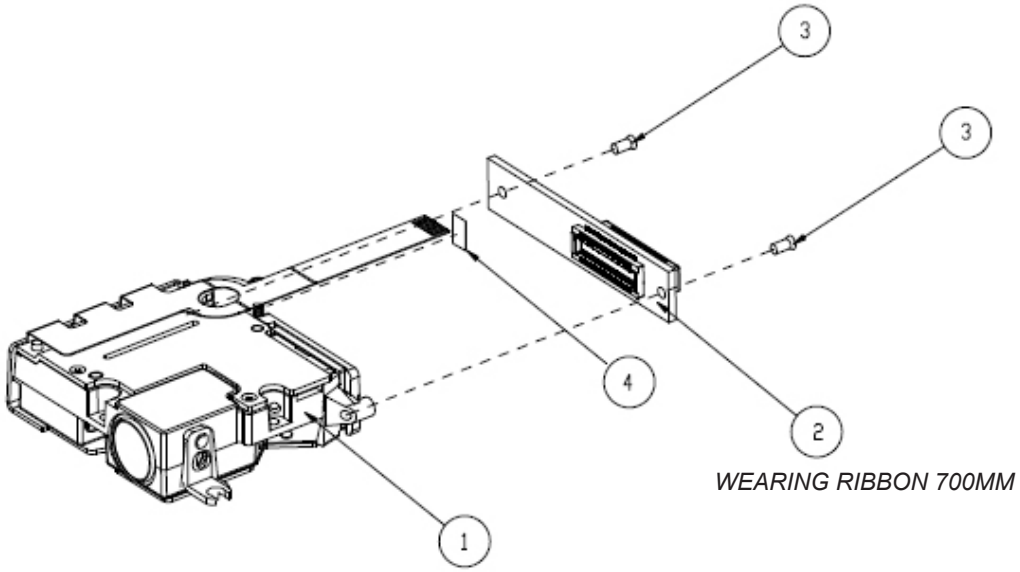
Item	P/N	Description	Parts Supply
1	52.8BU05G001	OPTICAL ENGINE BOTTOM THERMAL PAD GR-Hm 0.8mm	V
	70.8BU22GR01	ASSY BOTTOM COVER MODULE FOR PK-102-(SERVICE)	V
2	52.8BU09G001	BOTTOM GRAPHITE PLATE	
3	75.8BU03G011	BUY ASSY BOTTOM COVER MODULE PK-102	
4	51.8BU12G001	BATTERY PULL TAPE PK-101	
5	51.8BU17G001	EMI AL MYLAR COVER PK-102	

Assy Main Board Module For PK-102



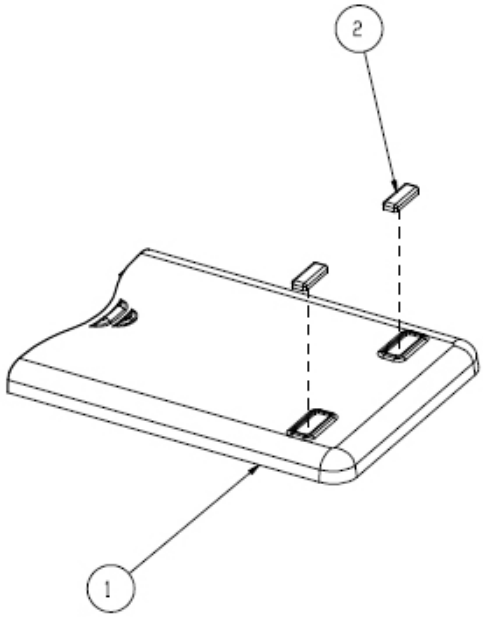
Item	P/N	Description	Parts Supply
1	80.8BUT1G073	PCBA MAIN BD PK-102 REV:D	
	70.8BU19GR01	ASSY PCBA MAIN BD MODULE FOR PK-102-(SERVICE)	V
2	51.81542G001	TAPE 3M J350 17*15mm	
3	80.8BU08G001	MICROSD CARD SDSDQ-4096 4GB CLASS-2 “Sandisk”	V
4	49.8BU01G022	SPEAKER 1W 8OHM LB15100083-C201 #28 PK-102	V

Assy Engine Module For PK-102



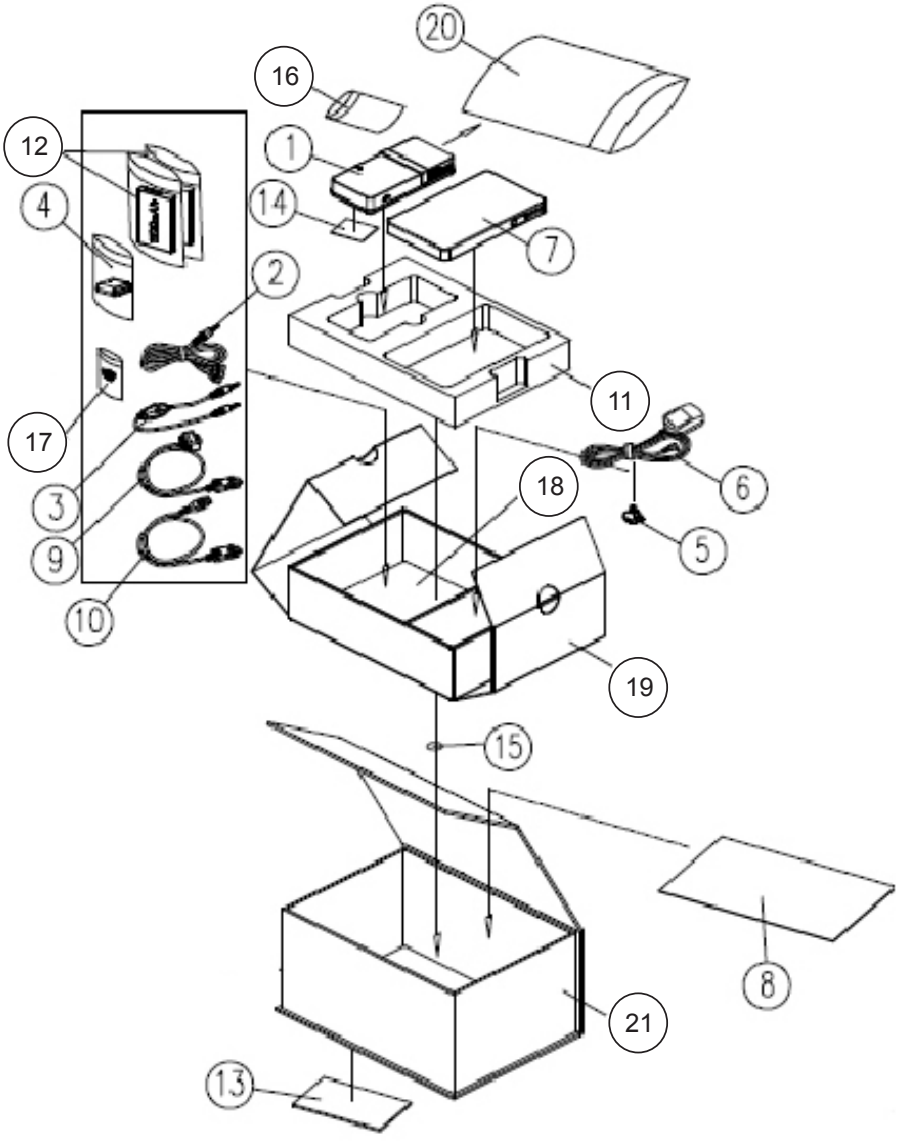
Item	P/N	Description	Parts Supply
	70.8BU20GR01	ASSY PROJECTOR LIGHT ENGINE PK-101-(SERVICE)	V
1	75.8BU01G001	0.17” DMD PICO PROJECTOR LIGHT ENGINE	
2	80.8BUT2G074	PCBA DMD CONNECTOR BD ENTEK PK-102 REV:E	V
3	85.1A52AG030	SCREW PAN MACHINE M1.4*3.0 P=0.3	
4	51.8BU30G001	3M DOUBLE-SIDED TAPE(L10*W5*T0.2MM)FOR PK-101 ENGINE	

Assy Battery Cover Module For PK-102



Item	P/N	Description	Parts Supply
	70.8BU23GR01	ASSY BATTERY COVER MODULE FOR PK-102-(SERVICE)	V
1	51.8BU02G011	BATTERY COVER PK-102	
2	52.8BU03G001	REAR RUBBER FOOT SILICON PK-101	

D.P. For PK-102(Packing Procedure Drawing)



Item	P/N	Description	Parts Supply
1	DC.8BU02G001	D.C. PK-102	
2	42.00235G001	CABLE 2.5MM MINI JACK-M TO 3*RCA-F R/W/Y OP-TOMA	V
3	42.00266G002	CABLE 2.5MM MINI JACK-M TO 3.5MM MINI JACK-M 1000mm WITH VOLUME CONTROL-WHITE-IPOD	
4	42.00294G001	CABLE AV ADAPTER DEXIM FOR IPOD WHITE	
5	47.8BU12G001	AC ADAPTOR PLUG USA TYPE PHIHONG PK-102	V
6	47.8BU11G001	AC ADPTR 100-240VAC IN 5V 2A OUT FOR PHIHONG	V
7	53.8BU01G001	SOFT BAG PK-101	V
8	36.00024G011	WARRANTY CARD US FOR OPTOMA PICO, 1 YEAR	V
9	42.00206G001	CABLE UNIVERSAL TO VGA 500MM	V
10	42.00288G001	CABLE UNIVERSAL TO USB M 500MM	V
11	56.8BU04G001	EVA TOP CUSHION	V
12	46.8BU03G001	BTRY NP-60 3.7V 1100mAh ELEMENTECH	
13	35.86301G031	UNIT BOX LABEL WHITE PK-101	V
14	35.8BU01G001	SPEC LABEL 30*20mm BLANK PK-101	V
15	35.D0105G001	LABEL PREVENT OPEN DIM38MM CIRCLE TRANS	
16	57.00002G001	PACK SIO2 DRIER 5g	
17	85.FA112G050	SCREW M2 AND 1/4 INCH-20 ADAPTOR PK-101	V
18	55.8BU16G001	INNER BOX INSIDE PK-102	V
19	55.8BU15G001	INNER BOX OUTSIDE PK-102	V
20	51.D0132G001	PE BAG LDPE 120*180*0.04 MM	V
21	55.8BU14G011	GIFT BOX JAPAN PK-102	V

Appendix B

I. Serial Number System Definition

Serial Number Format for Projector

Q	8BU	9	18	AAAAA	C	0001
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) : **Q = Optoma**

(2) : **8BU = Project code**

(3) : **9 = Last number of the manufacture year (ex:2009 = 8)**

(4) : **18 = week of the manufacture year (ex:the eighteen week of the year = 18)**

(5) : **AAAAA = not-defined**

(6) : **C = Manufacture factory (TW or CPC)**

(7) : **0001 = Serial code**

EX: Q8BU918AAAAAC0001

This label represents the serial number for PK-102. It is produced for USA at CPC on eighteen week of 2009. Its serial code is 0001.

II. PCBA Code Definition

PCBA Code for Projector

A	B	XXXXXXXXXX	C	XXX	EEEE
①	②	③	④	⑤	⑥

① : ID

② : Vendor Code

③ : P/N

④ : Revision

⑤ : Date Code

⑥ : S/N